RABENORT'S GEOGRAPHY

WILLIAM RABENORT



NORTH AND SOUTH AMERICA

(EXCLUSIVE OF THE UNITED STATES)

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Scene in the Temperate Zone, North America. Harvesting wheat, Canada.



View in the Torrid Zone, South America. Tropical vegetation, Ecuador.

RABENORT'S GEOGRAPHY

NORTH AND SOUTH AMERICA

(EXCLUSIVE OF THE UNITED STATES)

BY

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W. P. 24

The Globe Geography — The Western Hemisphere.
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Preface

This volume is one of a series of textbooks on geography in which the earth is treated primarily as the home of the human race.

Geography is conceded to be an eclectic subject, and textbooks differ in the proportion of component facts taken from meteorology, anthropology, physiography, and other contributing sciences. In this volume there are introduced into the account of North and South America, exclusive of the United States, those facts of history, biography, art, science, travel and general information which have distinct geographical aspects, and which are commonly regarded as fundamental to general culture. The reader is invited to study the earth for its human interest. The habits and customs of the peoples of the New World beyond the boundaries of the United States, their trade and political relations with one another and with our own land, have been given prominence. Railroads, steamship lines, the telegraph and telephone, as well as the movement of population toward the great cities and from one land to another, are treated fully, as their importance demands.

The explanations of geographical facts and conditions are intended to satisfy the natural and reasonable inquiry of the intelligent reader, young or old, concerning cause, connection and consequence of physical and social forces and their geographical bases and effects. The questions and exercises are designed to secure the intelligent attention and coöperation of the reader, and to insure the visualization of the earth and its divisions and characteristics, in detail, vividness and permanence sufficient to permit the location and representation with

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considerable accuracy of places referred to in general and current literature. The questions and exercises are further intended to form and fix the habit of referring to the map and the atlas, and to furnish the ability to interpret maps. To this end there are exercises in map sketching. Graphic expression is not, however, the sole requirement; there is provision for the location and description of places in orderly, connected statements.

Acknowledgment is made to Dr. George Sargent, Secretary of the American Museum of Natural History, for permission to reproduce from negatives belonging to the Museum, the pictures on pages 134, 199, and 202.

Illustrations not otherwise credited were provided through the courtesy of Mr. Frederick Schwanhausser, Sr.

It is impossible to mention every source from which material was drawn; Chisholm's Handbook of Commercial Geography, The International Geography, The Statesman's Yearbook and the Encyclopedia Britannica (Eleventh edition) have been followed in many instances. The publications of the Bureau of American Republics have been freely consulted.

Evidence of the widespread interest in education has appeared in the genial courtesy of the officials of foreign governments and others, strangers to the author, who afforded information and facilities for investigation in connection with this work. Among the many friends who gave valuable assistance the author desires to mention Mr. Albert F. Chadwick, who read the entire book, and Miss Margaret Aitkin, who read portions of it in manuscript, and also Mr. William J. Morrison, Mr. George H. Chatfield, Mr. Claude L. West, Mr. John W. Davis and Mr. John R. Wilson, all of whom revised the proofs.

W. R.

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NORTH AND SOUTH AMERICA
(EXCLUSIVE OF THE UNITED STATES)

INTRODUCTION

Every meridian circle passes through the north and south poles, and divides the surface of the globe into two equal parts, called hemispheres, or half-spheres. If we choose the circle formed by the meridians 20° west longitude and 160° east longitude, the hemispheres are called the Eastern and the Western hemispheres. A part of Iceland, a small part of Asia and all of New Zealand are thus thrown into the Western Hemisphere. If a meridian circle were chosen so that all of Asia should be in the Eastern Hemisphere, part of Africa would be in the Western Hemisphere.

Western Continent. Most of the land of the Western Hemisphere consists of two grand divisions, North America and South America. They form the Western Continent. Europe, Asia, Africa and Australia are the grand divisions of the land in the Eastern Hemisphere. Europe and Asia together are often called Eurasia. Eurasia and Africa form the Eastern Continent, and Australia is another continent or continental island.

The Western Hemisphere has less land and more water than the Eastern Hemisphere. The grand divisions of the Eastern Hemisphere have more than twice the area of the Western Continent. One grand division, Asia, is larger than all the land in the Western Hemisphere.

Names. The Western Hemisphere is called the New World, to distinguish it from the Old World. Civiliza-

tion and the history of the human race began in those parts of the Eastern Hemisphere, or Old World, which encircle the Mediterranean Sea. We can trace the history of mankind in that region for many centuries B.C., but the history of America does not begin until the discovery by Columbus in 1492 A.D. The Western Continent is called America, from Amerigo Vespucci, an Italian explorer, who voyaged to South America in 1499.

Form. North America and South America are each triangular in shape. In each the northern part is the broader, the distance between the Atlantic and Pacific being about three thousand miles, and each tapers to the south. The two grand divisions are joined by the Isthmus of Panama, which in many places is less than 50 miles wide. The continent extends from Point Barrow to the Strait of Magellan.

Location. The Atlantic Ocean is east of America, and the Pacific washes its western shores. The Western Continent, like the land of the Eastern Hemisphere, lies much nearer to the north pole than to the south pole; consequently the Arctic Ocean, whose icy waters touch the northern shores of North America, is by far the smallest of the oceans. This continent approaches closer to the Antarctic Ocean than does the land of the Eastern Hemisphere.

Questions

(Turn to the frontispiece map.)

1. What are the grand divisions of the Western Hemisphere?
2. Is either wholly north of the Equator? Which?
3. Is either wholly south of the Equator?
4. Is most of the land of the Western Hemisphere north of the Equator or south of the Equator?
5. Which grand division extends north of the Tropic of Cancer? South of the Tropic of Capricorn?

Surface. The mountains of America are exceeded in height only by the mountains of Asia. The principal highlands follow the shores of the Pacific, and at the north approach the great highlands which extend through Asia and Africa along the Pacific and Indian oceans. This region, which is continuous except for the narrow interruption of Bering Strait, is one of great volcanic activity. Most of the Pacific coast region is being slowly upheaved, and is therefore subject to earthquakes. Due to stresses and strains below the surface of the earth, which are not well understood, large masses of rock shift their position, sometimes several feet at one time. This produces tremors and shocks, often of great severity, as in the San Francisco earthquake of 1906 and the Japanese earthquake in 1923. Sea coasts may either rise gradually from the bottom of the sea, or sink slowly below the surface. In the former case, the coast is regular because the sea bottom is flat; in the latter, the water fills in the irregularities of the land, producing an irregular coast, with many islands, projections and indentations.

A secondary highland region exists along the Atlantic Ocean in both North and South America; these highlands are much older than the western highlands, and are, consequently, not so high nor so rugged. Between the principal and secondary highlands are vast central plains, which are the characteristic feature of the surface of North and South America.

Coast. Between Florida and the northern coast of South America there stretches a chain of islands, called the West Indies. Two great arms of the ocean are inclosed by these islands on the east, and the narrow southwestern part of North America on the west. The northern water is the Gulf of Mexico, which belongs to North America; the southern water, called the Caribbean Sea, lies along the northern coast of South America.


180 150 120 90 60 30 0 30 60 90 120 150 180 150
ARCTIC OCEAN
GREENLAND
SPITZBERGEN
FRANZ JOSEF LAND
LENIN LAND
NOVA ZEMBLA
Baffin Bay
ARCTIC CIRCLE
ICELAND
NORTH AMERICA
DOMINION OF CANADA
Hudson Bay
Bering Sea
Bering Strait
ALASKA
ASIA
Leningrad
Stockholm
BRITISH ISLES
London
Berlin
Paris
Vienna
Madrid
Constantinople
Mediterranean Sea
Cairo
Okhotsk Sea
Peking (Pekin)
Tokyo
Yokohama
Hong Kong
Calcutta
Bombay
Arabian Sea
B. of Bengal
EUROPE
ATLANTIC OCEAN
Portland
Chicago
New York
San Francisco
BERMUDA IS.
New Orleans
Gulf of Mexico
WEST INDIES
Caribbean Sea
Caracas
CENTRAL AMERICA
Quito
EQUATOR
St. Roque
AFRICA
INDIAN OCEAN
MADAGASCAR
EAST INDIES
AUSTRALIA
Melbourne
Sydney
NEW ZEALAND
TROPIC OF CAPRICORN
TROPIC OF CANCER
HAWAIIAN IS.
PACIFIC OCEAN
SOUTH AMERICA
Rio de Janeiro
Valparaiso
Buenos Aires
Cape Town
ANTARCTIC CIRCLE
60 30 0 30 60
180 150 120 90 Long. 60 West 30 0 Long. 30 East 60 from 90 Greenw. 120 150 180 150

Drainage. The rivers of the Western Continent are the largest and longest in the world. On account of the principal highlands being in the western part, most of the great rivers flow into the Atlantic Ocean.

Questions

(See map on opposite page.)

1. From what line are degrees of latitude counted?
2. What tropic crosses the southern part of North America?
3. Is it in north latitude? Is it in south latitude?
4. What tropic passes across the southern part of South America?
5. Is it in north latitude? Is it in south latitude?
6. What shape has a parallel of latitude?
7. How does it compare in size with the Equator?
8. How many degrees of latitude are there north of the Equator? How many degrees of south latitude are there?
9. What place north of the Equator has the highest latitude?
10. What place south of the Equator has the highest latitude?
11. What is the latitude of places on the Equator?

Comparison of North and South America. Much as the two grand divisions resemble each other, there are some important contrasts:

1. North America has many great lakes, whereas South America has but one of importance.
2. In North America a few great rivers flow into the Pacific Ocean. All the great rivers of South America flow into the Atlantic Ocean.
3. South America has more active volcanoes than North America, or any other grand division in the world.
4. North America has an irregular coast, 27,500 miles in length, and consequently possesses many excellent har-

bors; on the other hand, South America has a regular coast line, 16,500 miles long, with few indentations.

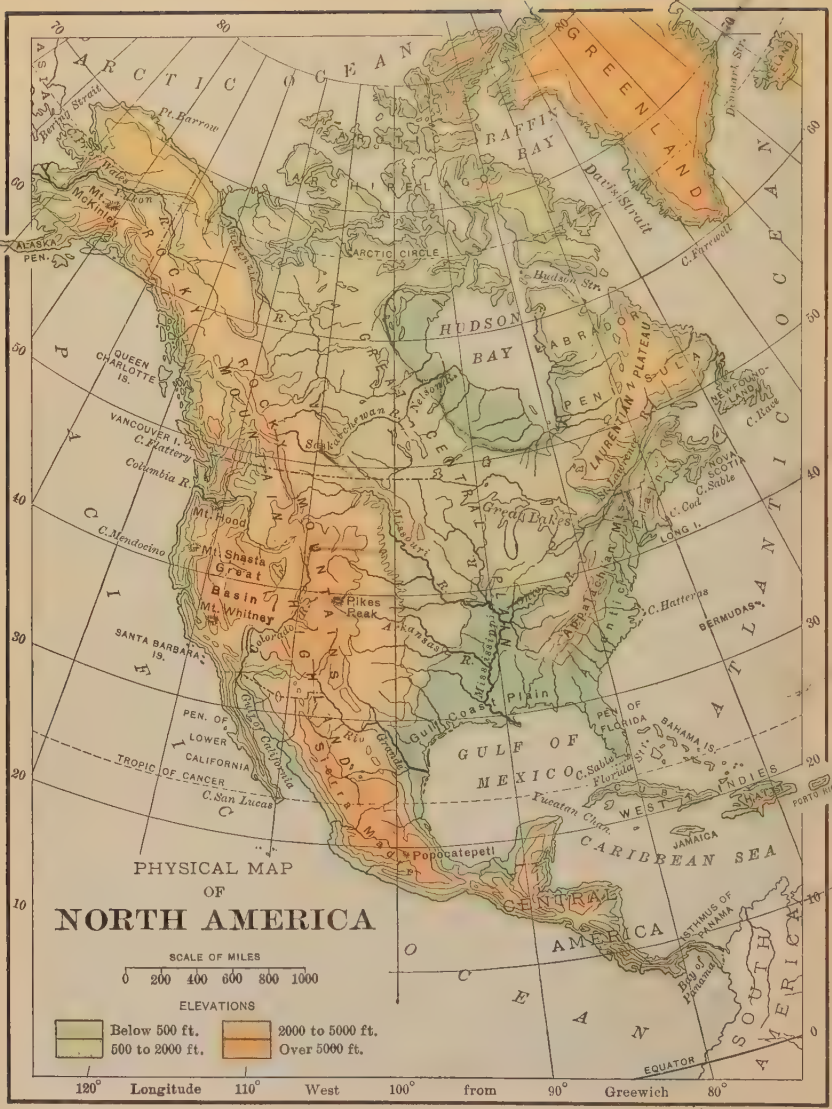
5. The bulk of South America lies in the Torrid Zone. North America lies chiefly in the North Temperate Zone.

Questions

(Turn to frontispiece map and map on page 4.)

1. Find the meridian of 0° longitude. Through what group of European islands does it pass?
2. What meridian passes through western Greenland?
3. In what direction is this meridian from the meridian of 0°?
4. Is it in east longitude? Is it in west longitude?
5. The meridian which passes through western Greenland passes through what land south of the Equator?
6. At what points do all meridians meet?
7. In what directions may you travel in moving along a given meridian?
8. In what direction is Greenland from the eastern point of South America?
9. What meridian passes through the middle of North America?
10. Is it in east longitude? west longitude? Why?
11. Through what part of North America does the meridian of 80° west longitude pass?
12. Through what part of South America does the same meridian pass?
13. What is the longitude of central Alaska?
14. What is the longitude of the northeastern part of Asia?
15. How many degrees of east longitude are there?
16. How many degrees of west longitude are there?
17. Is the meridian of 180° in east or west longitude?
18. What is the shape of a meridian?
19. Are all meridians of the same length?
20. What meridians form the boundary between the Eastern and Western hemispheres?

Part I
NORTH AMERICA


ARCTIC OCEAN
GREENLAND
RAFFIN BAY
Davis Strait
Baffin I.
Iceland
Denmark Str.
Bering Strait
Ft. Barrow
ALASKA PEN.
Mt. McKinley
Mt. Elias
ROCKY MOUNTAINS
ARCTIC CIRCLE
Hudson Str.
C. Farewell
HUDSON BAY
LABRADOR PENINSULA
LAURENTIAN PLATEAU
NEWFOUNDLAND
C. Race
QUEEN CHARLOTTE IS.
VANCOUVER I.
C. Flattery
Columbia R.
Saskatchewan R.
Nelson R.
NOVA SCOTIA
C. Sable
C. Cod
LONG I.
Great Lakes
Mt. Hood
C. Mendocino
Mt. Shasta
Great Basin
Mt. Whitney
Pikes Peak
Missouri R.
Mississippi R.
Arkansas R.
APPALACHIAN MTS.
C. Hatteras
BERMUDAS
SANTA BARBARA IS.
Coast Plain
PEN. OF LOWER CALIFORNIA
TROPIC OF CANCER
C. San Lucas
Rio Grande
Gulf of California
Sierra Madre
GULF OF MEXICO
C. Sable Florida
PEN. OF FLORIDA
Str. of Florida
BAHAMA IS.
WEST INDIES
CUBA
PORTO RICO
Yucatan Chan.
JAMAICA
CARIBBEAN SEA
Popocatepetl
CENTRAL AMERICA
ISTHMUS OF PANAMA
Bay of Panama
SOUTH AMERICA
EQUATOR
PACIFIC OCEAN
ATLANTIC OCEAN
PHYSICAL MAP
OF
NORTH AMERICA
SCALE OF MILES
0 200 400 600 800 1000
ELEVATIONS
Below 500 ft.
500 to 2000 ft.
2000 to 5000 ft.
Over 5000 ft.
120° Longitude 110° West 100° from 90° Greewich 80°
80 70 60 50 40 30 20 10 0

CHAPTER I

NORTH AMERICA AS A WHOLE

Location. North America is wholly north of the Equator. The mainland is not so close to the north pole as is Asia, but Greenland and other islands lie the farthest north of any lands. North America is much farther west than South America. The eastern coast of North America and the western coast of South America are in about the same longitude. At the northwest North America lies so close to Asia that Bering Strait, which divides them, is but thirty-six miles wide at the narrowest part. North America, with Asia, thus almost entirely incloses the Pacific Ocean on the north. As a whole, however, North America is nearer to Europe and Africa than to Asia. The Atlantic Ocean, which lies between Europe and North America, is much narrower than the Pacific.

Part of the northern coast of North America extends into the North Frigid Zone, and the narrow southern part enters the Torrid Zone, but the remainder, which is almost its entire area, is in the North Temperate Zone.

Size. North America ranks third in area among the grand divisions. Asia and Africa are larger. Its area is nine million square miles. The greatest extent is from northwest to southeast, the distance from Point Barrow to the Isthmus of Panama being six thousand miles. The greatest continuous width, three thousand miles, is south of Hudson Bay.

Form. North America is triangular, the three angles being in Alaska, in Labrador opposite Newfoundland and



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at Panama. Like all the lands of the Northern Hemisphere, it is irregular in outline. In comparison with its area, North America has, next to Europe, the longest coast line of any grand division. Its total length is about twenty-seven thousand five hundred (27,500) miles.

Questions

(Turn to the maps, pages 8, 10.)

1. Between which parallels and which meridians does the mainland of North America lie?
2. Which countries extend into the North Frigid Zone?
3. Which country is partly in the North Temperate and partly in the Torrid Zone?
4. Which is wholly in the North Temperate Zone?
5. Which countries are wholly in the Torrid Zone?
6. Which is farther north, Alaska Peninsula or Hudson Strait?
7. In about what latitude is the southern part of each?
8. What is the longitude of Alaska Peninsula? What is the longitude of the extreme western coast of South America? How many degrees of longitude between them?
9. What part of the circumference of the earth is this distance?
10. What is the longitude of the eastern coast of Australia? How many degrees of longitude between the longitude of Australia and that of Alaska Peninsula? (Map, page 4.)

Exercises

Draw from memory, in a circle as large as possible, a map of the Western Hemisphere. Shade North America. Draw the Equator, and the parallels which bound the zones, and mark these lines with their respective names. Do this in two minutes.

Arrange these islands in order from east to west, giving the longitude of each: Newfoundland, Greenland, Bermudas, West Indies.

Measure on a globe the distance in miles from the Atlantic coast of North America to the Atlantic coast of Europe. Between the western coast of North America and the eastern coast of Asia.

Coast. The coast line of southern North America is more regular than that of the northern part, and in this

respect resembles the coast line of most of South America, the land here, with the exception of the Mississippi delta, having risen from the level of the sea bottom. The largest indentations are Hudson Bay, on the northeast coast, and the Gulf of Mexico, on the southeast. Both are arms of the Atlantic Ocean.

The Atlantic Ocean near Newfoundland is shallow, the elevations of the ocean bottom being known as Banks. These Banks are the feeding grounds for great schools of fish. The Gulf of Mexico is marked by two great peninsulas, Florida and Yucatan. Between them is the western end of a great island group, the West Indies, a great chain of submarine mountains, linking the eastern shores of the two grand divisions of the Western Hemisphere. On these islands Columbus first saw the New World.

In the northwest, along the coast of southern Alaska, is an archipelago of rocky islands which may be compared with the Chonos Archipelago along the southern end of South America. Lower California, a peninsula in about the same latitude as Florida, incloses the narrow Gulf of California, a long arm of the Pacific Ocean.

Surface. The surface of North America consists of three sections: The principal highlands in the west, secondary highlands in the east, and, between the principal and secondary highlands, a great central plain.

The principal highlands, like those which extend through South America to Cape Horn, are part of the great highlands of the globe which border the Pacific and Indian oceans. In North America this region is known as the Rocky Mountain highland, or sometimes, because the ranges lie along the Pacific like a cord, they are called the Cordilleras. They are bold, rocky mountains, of comparatively recent formation.

They are narrow in the north, broader in the middle,

and again narrow at the south. The broad plateaus rise gradually from the Arctic Ocean and become lower toward the south. Upon the plateau region the still higher mountain ranges extend from northwest to southeast. The longest mountain range is the most eastern, the Rocky Mountains. This range is paralleled by



The Rocky Mountains, Canada.

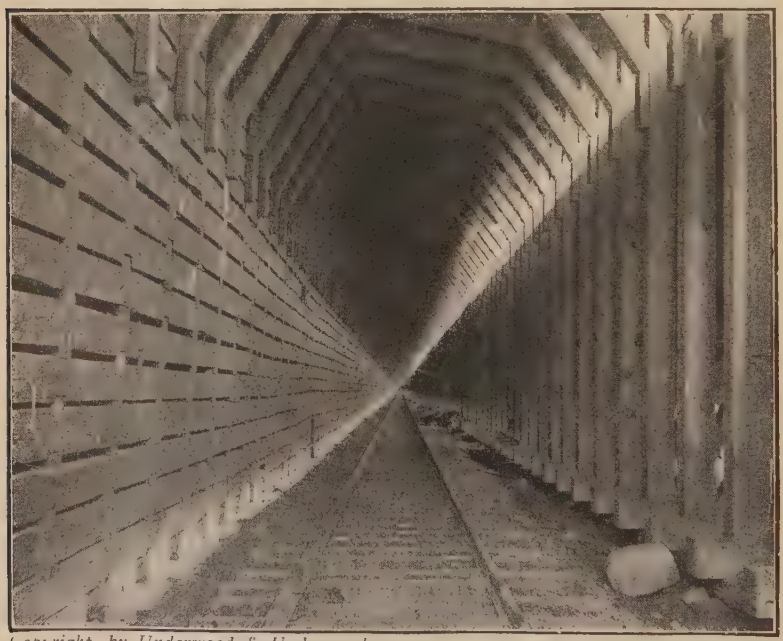
shorter ranges lying between it and the Pacific slope. The western borders of the great plateaus are marked by the Sierra Nevada and Cascade ranges, in the United States, and the Sierra Madre in Mexico. The chief of these plateaus are the Colorado and Columbia plateaus and the Great Basin in the United States, and the plateau of Mexico.

There are many volcanoes in this region, as there are throughout the other great highlands which rise above the shores of the Pacific and the Indian oceans, but in North America they are extinct, except in the southern part and in Alaska. Earthquakes, due to the rising of

the land and the disturbance of great masses of rock underground, sometimes cause terrible disasters.

The highest point in the western highland system of North America is Mt. McKinley, in Alaska, which is 20,464 feet high. Mt. Logan, in Canada, is 19,539 feet high; Mt. Whitney, the highest point in the main part of the United States, is 14,502 feet high; Mt. Orizaba, the highest point in Mexico, is 18,314 feet above sea level.

Many of the higher peaks are capped with snow throughout the year. The snow collects in the mountain gorges, and is gradually compacted into a river of ice, called a glacier. The glacier slowly forces its way down the valleys; and, melting at the foot, forms the source of mountain streams. (See picture, page 35.) In other places the great masses of snow slide down the sheer mountain slopes as avalanches, tearing away loose earth



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A great shed in the mountains of Canada, protecting a railroad track from avalanches.



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A scene on the Laurentian plateau.

and rocks. Trees, mining camps, sections of railroad and other obstacles are carried away, and the path of an avalanche through the forests and down the mountain side is marked by ruin.

The secondary region of highlands is in the east of North America. This region is divided into two parts, the first the Appalachian Mountains, whose highest point is Mt. Mitchell (6,711 feet), and the second the Laurentian plateau. These highlands are old and weathered. The mountains are low and have rounded outlines because the air, water and frost have caused the rocks to crumble away.

Between the principal highlands of the west and the secondary highlands in the east extends the great central plain of North America. It consists of a northern and a southern slope. The divide between them is called "the Height of Land." From the Height of Land the plain slopes southward toward the Gulf of Mexico. North of the divide the central plain slopes toward Hudson Bay

in the south and east, and toward the Arctic Ocean in the west and north.

Untold ages ago most of the great central plain was the bottom of a vast sea, above the surface of which appeared the eastern and western highland regions.



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Plowing on a great ranch in Manitoba, Canada, on the northern slope of the great central plain.

Questions

(Turn to the map, page 8.)

1. In what parts of North America is most of the land five hundred feet or less above the level of the sea?
2. How do the Appalachian and the Laurentian plateaus compare in extent?
3. Which peninsula of North America has the lowest surface?
4. Which has the higher surface, Newfoundland or Greenland?
5. Which extends farther inland, the coast plain of the Atlantic or of the Pacific slope of North America?

Exercises

Sketch a map of North America. Shade the highlands, making the lower plateaus light and the higher ones dark.

Mark the chief mountain ranges and the highest peaks.

Practice doing this rapidly from memory.

Drainage. In North America are some of the greatest rivers in the world.

The Mississippi drains most of the southern slope of the central plain, flowing through the heart of the United States into the Gulf of Mexico. The mud carried down is deposited at its mouth in the form of many low bars and islands. Between them wind the numerous channels which form the mouth of the river. Such a river mouth is called a delta, from its resemblance to the Greek letter Δ (*delta*).

From the source of the Missouri to the mouth of the Mississippi, a distance of 4,200 miles, is the longest fresh-waterway in the world.

The northern slope of the great central plain has two divisions, each drained chiefly by a large river system. Through the southern and eastern section flows the Nelson-Saskatchewan River, taking a course toward the northeast into Hudson Bay. The western and northern region is drained by the Mackenzie River, which pursues a northwestern course into the Arctic Ocean, and, like the Mississippi, has a delta.



The St. Lawrence River.

Between the two eastern plateaus, the Laurentian on the north and the Appalachian on the south, flows the St. Lawrence River, which drains the Great Lakes. It flows northeast into the Gulf of St. Lawrence.



North America. Relief and Drainage.

The rivers which drain the Atlantic slope of the Appalachian Mountains are numerous, but comparatively short.

Upon the Pacific slope of the principal highlands are four rivers whose sources are upon the plateau. These, in order, from north to south, are the Yukon, the Fraser, the Columbia and the Colorado. The Yukon flows

through dense spruce forests. It is an intensely muddy stream, and its mouth forms a great delta. As the plateau has risen, the other three rivers (Fraser, Columbia, Colorado) have cut passages through it to the Pacific Ocean. The valley of each of these three rivers is marked by huge gaps and high, narrow gorges, called cañons, at the bottom of which the river has its bed. The cañon of the Colorado is the most wonderful of these examples of the work of water.

Questions

(Turn to the map, page 8.)

1. What is the source of a river?
2. What is the mouth of a river?
3. Which part of a river is usually widest? Why?
4. How is this shown on a map?
5. Where does the water of rivers come from?
6. How does it differ from the water of the oceans?
7. What is a spring? What is a brook? What is a rivulet?
8. What is the bed of a river? Which is the right bank of a river? The left bank?
9. What is a tributary?
10. Name the principal tributaries of the Mississippi River. Name two on the right bank. One on the left bank.
11. What is the current of a river?
12. What causes the current of a river?
13. Trace the course of the Yukon River.

Note.—Keep the finger or pointer on the line which represents the river, and move it slowly. Begin at the source and end at the mouth.

14. Why should we begin at the source and move the pointer toward the mouth?
15. Why are rivers represented by irregular lines? What do the irregularities show?
16. What is a delta? Why so called? How formed?
17. What is an estuary?

Lakes. All the northern grand divisions, especially North America and Europe, have important lakes. Many ages ago, in what is known as the Ice Age, much of these northern lands was covered by an enormous sheet of ice, or glacier. In North America the glacier covered all of Canada, and its southern borders would be roughly marked by a line drawn from the Atlantic to the Pacific, so as to include all of New England and Long Island, and following the Ohio and Missouri rivers and the western part of the boundary between Canada and the United States to Vancouver Island. When the ice melted the great masses of earth and rock which it had gathered on its southward course were deposited, frequently forming hills upon the level land and damming up valleys, which filled with water, forming lakes.

North America exceeds all the other grand divisions in the size and number of its lakes. The Great Lakes, the most remarkable bodies of fresh water in the world, are in part the result of glacial action. Between two of them that are on different levels, are the Niagara Falls. The water of these lakes is drained into the Atlantic Ocean by the St. Lawrence River. A large drainage canal has been cut from Lake Michigan through the State of Illinois to connect with a tributary of the Mississippi River. The northern slope of the great central plain has many lakes of great size, which drain through the Mackenzie River into the Arctic Ocean, or through shorter rivers into Hudson Bay.

Questions

(Turn to the maps, pages 8 and 18.)

1. What is the principal river of North America? What section does it drain?
2. What is the principal river that flows into the Atlantic Ocean?

3. What is the principal river which drains the western slope of the Appalachian Mountains?

4. What five great rivers drain the eastern slope of the Rocky Mountain Highland?

5. Into what body of water does each flow?

6. What three great rivers drain the western slope of the principal highlands of North America?

7. Into what body of water does each flow?

8. How many of the rivers referred to in the preceding questions rise in the western highlands?

9. Which lake in the Mackenzie River basin lies at the lowest elevation? (Maps, pages 8 and 32.)

10. How does the elevation of Athabasca Lake compare with that of Great Slave Lake?

11. What great body of water is near the headwaters of the Ohio River?

Exercises

On a relief map of North America draw from memory the principal rivers and lakes. Mark the names. Do this in two or three minutes.

Make a list of North American rivers which form deltas.

Rule a table like the following and fill it out for all the great rivers of North America.

Name.	Source.	Drains.	Direction.	Flows into
1. Arkansas.	Western highlands.	Eastern slope and central plain.	S. E.	Mississippi River.
2. Etc.				

Climate. The climate of North America depends chiefly upon distance from the Equator, winds, nearness to the ocean, and altitude. Owing to its situation, most of the grand division has the cool weather of the North Temperate Zone. The West Indies and the southern extremity of North America, lying within the Torrid Zone, where the sun is overhead, have a tropical climate.



North America. Isotherms, winds and ocean currents.

Tropical North America has the northeast trade winds, which blow toward the Equator, because in those regions the air, as well as the water of the oceans, moves from the cooler and toward the warmer regions.

North of the northeast trades is a shifting belt of calms, where there are descending currents from the upper air. North of the calms the winds blow mostly from the southwest. These southwest winds, or prevailing westerlies, as they are called, are stronger winds than the trade winds, but they do not blow so steadily in one direction.

The belt of calms between the trades and the westerlies is called the horse latitudes, because formerly sailing vessels which carried live stock, when becalmed in these latitudes, were sometimes forced to throw their live freight overboard on account of the shortage of fresh water on the ships.

The westerlies carry the moisture of the Pacific Ocean to the western slope of the principal highlands. When they rise above the cold heights, the air is chilled and the moisture is condensed to rain or snow. The winds move on over the land, but are drier, and as they continue to lose moisture, or to become warmer, eventually become rainless, as in the Great Basin. On account of these conditions the heaviest rainfall in North America occurs on the Pacific slope, especially in southern Alaska, and near Vancouver Island.

Water has a moderating effect upon climate, making it cooler in summer and warmer in winter. Winds are caused by the difference between the heat of the land and of the water. Land is usually either hotter or colder than water because it is heated and cooled more rapidly, and because the currents in the water keep its temperature more even; thus in summer the water is cooler than the land, and in winter it is warmer. Hence winds blow from the Gulf of Mexico toward the heated central plain in summer, and bring rain to the eastern slopes, which would otherwise receive little or none from the westerlies. In winter, however, the winds blow from the cold central plain toward the Gulf of Mexico, and then the southern part of the plain has somewhat less rain than in summer. The cold polar winds, often carrying snow, penetrate in winter to the southern slope of the central plain and make it much colder than the shores of the oceans. The same conditions which determine the directions of these winds make the difference between land and sea

breezes, especially upon islands. During the day, when the sun heats the land, the wind blows from the water, but at night the land cools and the wind changes and blows toward the sea.

Over the broad land masses of North America and Eurasia neighboring sections often vary in temperature. As the mass of air is carried eastward by the prevailing westerlies it moves in great swirls hundreds of miles in diameter. The center of this great moving mass of air is called an area of low pressure; the edges are called areas of high pressure. An advancing area of low pressure is preceded by warmth and followed by cold, sometimes called a "cold wave." The winds blow from all points toward an area of low pressure, and as that area moves, the winds which circle around it move also. Such winds are called cyclones, because they move in paths like *cycles* or rings. Sometimes a very small cyclone blows at terrific speed, and does great damage; such a cyclone is properly called a tornado. But most cyclones, or cyclonic storms, are not dangerous. They are the winds with which we are most familiar. Most of the winds in the temperate regions of North America and Eurasia are cyclonic. The center of the cyclone travels toward the east, and most of the centers leave North America near the St. Lawrence River. When the center is near the Atlantic coast, rain-bearing winds often blow toward it from the Atlantic Ocean. Hence a heavy ocean rain storm in that section is called a northeaster or a southeaster. At the exact center of low pressure there is calm. The low pressure is often preceded or attended by rain or snow, if the winds have not already been robbed of their moisture. These periods of low pressure last but a few days at most, and are succeeded by areas of high pressure, which bring clearing and cooler weather.

The region around the West Indies is the starting

place of severe cyclonic storms called hurricanes. These storms endanger vessels on the neighboring waters of the Atlantic Ocean and the Gulf of Mexico. Occasional hurricanes reach the southern and eastern seaboards of North America and sometimes cause considerable damage.

North of the Tropic of Cancer the temperature of the Pacific Ocean is brought to the western coast of North America by the westerlies; hence this coast has a mild oceanic climate—warmer in winter and cooler in summer than the interior of the grand division, or its eastern coast in the same latitude.

North America, like Eurasia, is a great land mass, its interior being far removed from the influence of the oceans; hence most of it has a continental climate; that is, the weather in summer is very different from that in winter, and the weather is likely to change from day to day.

Altitude also affects climate. The higher a place is above the level of the sea the colder it is. Many of the mountains of the principal mountain system of North America, even within the Torrid Zone, are covered with snow throughout the year. The air which everywhere surrounds the earth acts like a blanket to retain the warmth of the sun. But on the plateaus and mountains the covering of air is thinner, and the heat escapes more quickly. The direct rays of the sun are hot to the skin, but there is no warmth in the air.

Questions

(Turn to the maps, pages 8 and 22.)

1. Which ocean furnishes the moisture for the rainfall drained through the rivers of the western highlands?
2. How is it brought to the highlands?
3. Why does the moisture of the air sometimes change to rain? When does it take the form of snow?

4. Has Florida a continental or an oceanic climate?
5. Which type of climate has the lake region? Why?
6. In what direction does the Labrador Current flow? The Gulf Stream? The Japan Current?
7. What is the temperature of the air above the Gulf Stream?
8. What is the difference in temperature between Newfoundland and Vancouver Island? What causes this difference?
9. In which direction do the prevailing winds blow across North America?
10. In which direction do the prevailing winds blow over the West Indies? What are these winds called?

Plants. The soil of North America is remarkably fertile. Even the arid eastern slopes of the principal highlands and the dry parts of the plateau of Mexico yield abundant crops when irrigated. The vegetation of Temperate North America is widely varied. Forests abound in the highlands and on the northern slope of the central plain. The great prairies of the central plain were origi-



Grizzly bear.

nally treeless grass lands, the natural pastures of the bison. They are now the grain lands of North America, yielding wheat in the north, and Indian corn, wheat and cotton farther south. Tobacco, rice and sugar cane are grown. Fruit trees of all kinds, from the orange in the south to the apple in the north, are widely raised. In the extreme north the vegetation consists of stunted trees, mosses and lichens, and there are many swamps which are frozen for a large part of the year. The tropical region of North America is of limited area. It produces palms, bananas and valuable timber, such as mahogany, ebony and rosewood.



Prairie dogs.

Animals. The animals of North America include the bison, now almost extinct, and the grizzly bear, the most ferocious of all animals, and more to be feared than the lion or tiger. The raccoon, skunk and prairie dog are found only in North America. The musk ox, which ranges over the frozen areas of the extreme north, is also native to North America. Moose, elk and other deer are numerous. Among the western foothills the coyote, and in the northern woods and streams the beaver, are frequently met. The walrus, seal, polar bear and Arctic fox

are denizens of the far north. In the inhabited parts of North America the larger wild animals have disappeared. Rabbits, squirrels, muskrats, foxes and small game are often plentiful, but the domestic animals are far more numerous. This is especially true of the western part of the central plain, where droves of horses, herds of cattle, and flocks of sheep graze over the ranges whose herbage once sustained countless bison and antelopes.



Coyote.

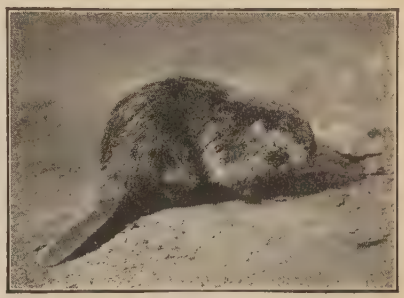
The coyote, or prairie wolf, is abundant everywhere from the great plains to the Pacific Ocean. It is of a grayish color, and is noted for its great speed and for its constant dreary howling at night.

The birds of North America number about seven hundred species, varying in size from the tiny humming bird which darts in search of insects about the summer flowers to the great bald eagle which frequents the solitude of lofty mountains. Among the birds much hunted for food are the canvasback and other ducks, wild goose, wild turkey, quail and partridge.

The waters along the continental shelf which skirts the shores of North America abound in food fish. Immense catches of cod and mackerel are made every year. The bluefish is highly prized for food. Shad and salmon ascend the rivers, where they are caught in countless numbers, the salmon being extensively canned. Oysters,

clams, crabs and lobsters are important shellfish. The brook trout is deemed the finest fresh-water fish. The maskinonge, which measures as much as six feet in length, is the largest of the fresh-water fish. It is found in the region of the Great Lakes. Of equal size among the salt-water fish are the tarpon and jewfish of the Atlantic Ocean and Gulf of Mexico, and the black sea bass of the Pacific Ocean.

Beavers are valued for their fur, which is dense and soft. They formerly abounded in the northern forests, but constant pursuit by trappers has greatly reduced their numbers. In most localities they are protected by the game laws. Beavers build dams to deepen the streams along which they make their houses. For this purpose they gnaw down small trees and cover them with stones and mud which they pack into a solid mass by blows from their powerful broad tails.



Beaver.

People. The original inhabitants of North America belong to two races: the Eskimos, of the yellow race, who inhabit the Arctic regions; and the American Indians, or the red race, who once roamed over the rest of the grand division.

The Eskimos, living in a region little desired by the settlers who poured into the country from Europe, have remained unmolested, but the Indians have given way before the Caucasians, who have acquired possession of the greater part of North America. Many Indians live on large tracts of land reserved for their use and called reservations. Several million Indians yet live in Mexico.

The chief countries of North America are:

1. The Dominion of Canada, settled by English and French; thousands of American farmers from the United States are removing thither.



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Indian on the central plain in Canada.

2. The United States of America, where English is chiefly spoken, but which contains settlers from all nations. Alaska belongs to the United States.

3. Mexico, where Spanish is chiefly spoken, even by the Indians.

4. Central America, consisting of six small Spanish-speaking republics and one English colony.

5. The West Indies, consisting of the republics of Cuba, Haiti and the Dominican Republic, and many colonies of the United States and of European countries, and containing a large population of white men and negroes. Spanish, English, French and Dutch are the prevailing languages in different islands.

CHAPTER II

THE DOMINION OF CANADA

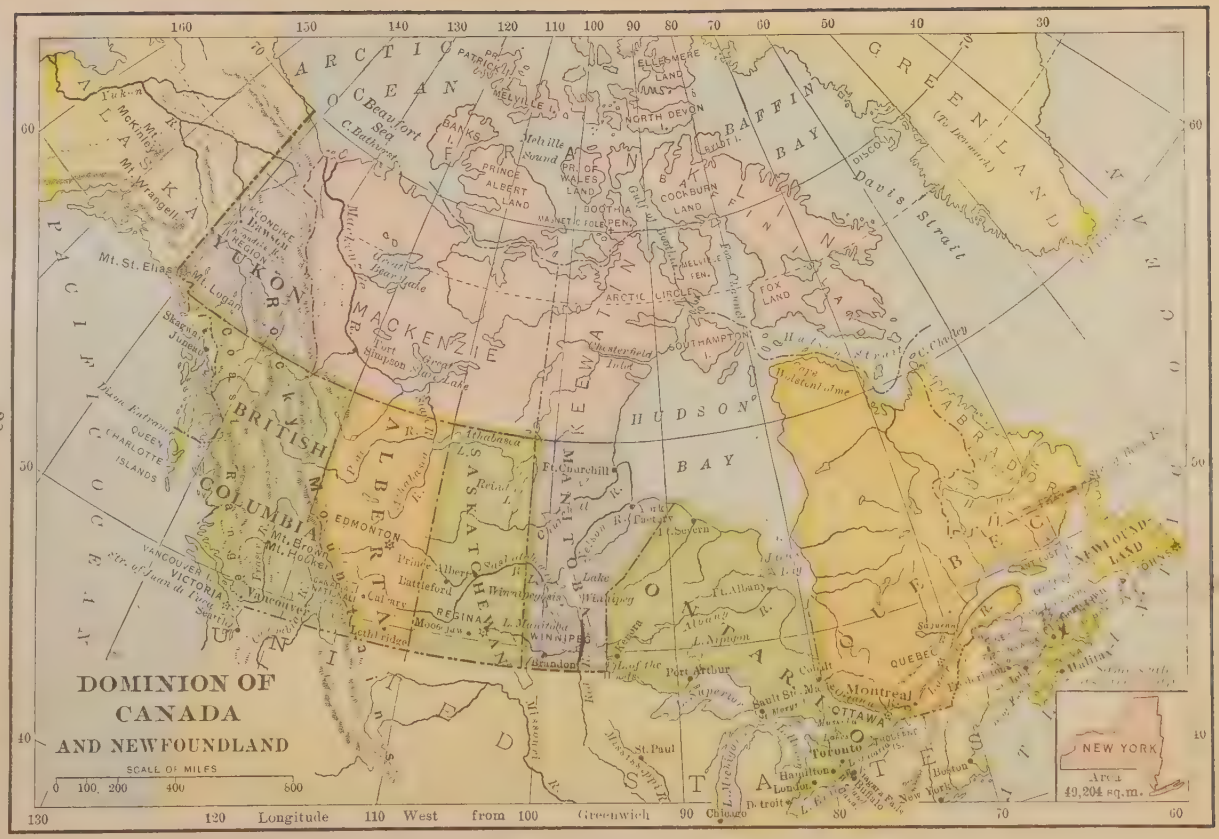
It has been said that the sun never sets upon the British Empire. It has possessions upon the mainland of every grand division, and also upon the scattered islands which lie like stepping-stones in the waters between. Most of the northern part of North America belongs to the British Empire, and is called the Dominion of Canada.

Location. Canada extends from the Arctic Ocean to the Great Lakes, and is bounded on the south by the United States. The eastern half of the boundary between the two countries is chiefly water, much of it being in the Great Lakes and the St. Lawrence River. The western half is the parallel of 49° north latitude. To the north of Canada lies the Arctic Ocean, and on the east are the Atlantic and the part of Labrador which belongs to Newfoundland. Canada's Pacific boundary is comparatively short, because Alaska, which lies to the northwest, includes a long narrow strip along the Pacific Ocean extending south to latitude 54° 40′.

The northern coast of Canada is in the North Frigid Zone. The rest is in the North Temperate Zone.

Questions

1. What parallel forms the western half of the boundary between the United States and Canada?
2. How much of Europe lies north of 50° N.? (Map, page xviii.) How much of Canada?
3. Which part of the North Temperate Zone is more favorable to civilization, that occupied by Canada, or that occupied by the United States? Why?


DOMINION OF CANADA AND NEWFOUNDLAND
SCALE OF MILES
0 100 200 400 600
Longitude 130 120 110 100 90 80 70 60 West from Greenwich
ARCTIC OCEAN
Beaufort Sea
PACIFIC OCEAN
ATLANTIC OCEAN
ALASKA
YUKON
MACKENZIE
BRITISH COLUMBIA
ALBERTA
SASKATCHEWAN
MANITOBA
KEEWATIN
HUDSON BAY
BAFFIN LAND
GREENLAND (To Denmark)
Davis Strait
ONTARIO
QUEBEC
LABRADOR
NEWFOUNDLAND
PRINCE EDWARD I.
NOVA SCOTIA
Halifax
QUEEN CHARLOTTE ISLANDS
VANCOUVER I.
VICTORIA
Mt. St. Elias
Mt. McKinley
Mt. Wrangell
Mt. Logan
Mt. Brown
Mt. Hooker
Skagway
Dawson
Fort Simpson
Fort Norman
Great Bear Lake
Great Slave Lake
Athabasca R.
Peace R.
Liard R.
Mackenzie R.
Yukon R.
Fraser R.
Columbia R.
Churchill R.
Nelson R.
Saskatchewan R.
Red R.
Assiniboine R.
Winnipeg R.
Albany R.
Moose R.
Ottawa R.
St. Lawrence R.
St. Maurice R.
Missouri R.
Mississippi R.
Rocky Mts.
Selkirk Mts.
Coast Mts.
Cascade Mts.
Edmonton
Calgary
Prince Albert
Battleford
Moose Jaw
Regina
Medicine Hat
Brandon
Winnipeg
Lake Winnipeg
L. Manitoba
L. Athabasca
L. Superior
L. Michigan
L. Huron
L. Erie
L. Ontario
Fort Churchill
Fort Simpson
Fort Norman
Fort Albany
Port Arthur
Duluth
St. Paul
Minneapolis
Chicago
Detroit
Toronto
Hamilton
London
Buffalo
New York
Boston
Montreal
OTTAWA
Quebec
St. John
Portland
Vancouver
Victoria
Seattle
Calgary
Edmonton
Banks I.
Melville I.
Prince Patrick I.
Ellesmere Land
North Devon
Prince Albert Land
Prince of Wales Land
Victoria Land
Boothia Land
Cockburn Land
Melville Pen.
Fox Land
Southampton I.
Baffin Bay
Lancaster Sd.
Barrow Str.
Prince Regent Inlet
Chesterfield Inlet
Wager Inlet
Repulse Bay
Hudson Str.
Labrador Current
Gulf Stream
Arctic Circle
Magnetic Pole (1904)
Magnetic Pole (1831)
NEW YORK
Area 49,204 sq. m.

4. Which is the shorter distance from England, New York or the mouth of the St. Lawrence? (Study a globe.)

5. How do degrees of longitude on the parallel which passes through New York compare in length with those in the latitude of the mouth of the St. Lawrence? Why? (Study a globe.)

Size. Canada is larger than the United States. It is larger than Australia, and almost as large as Europe. On account of extensive immigration, its population of nearly 9,000,000 is increasing rapidly.

Coast. The coast line of Canada is very irregular, because it is in the northern region of sinking coasts. Its indentations are numerous, the largest being Hudson Bay, named for its discoverer, the great captain of the Half Moon, who first sailed up the Hudson River also. The southern arm of Hudson Bay, known as James Bay, approaches within three hundred miles of the Great Lakes. The great islands which guard the northern coast, and the tortuous channels between them, are frozen for the larger part of the year. The Pacific Coast is bordered by an archipelago, the largest islands being Vancouver Island, which extends to the northwest point of the United States, and the Queen Charlotte group.

The greatest peninsula is the Labrador Peninsula, nearly surrounded by Hudson and James bays and Hudson Strait, the Atlantic Ocean, the Gulf of St. Lawrence, and the estuary, or broad mouth, of the St. Lawrence River.

Separated from Labrador by the Strait of Belle Isle is the island of Newfoundland. This does not belong politically to the Dominion of Canada, but is a separate colony of the British Empire. The colony of Newfoundland includes part of the Labrador Peninsula extending from the coast inland, which is also called Labrador.



The Rocky Mountains at Banff, Province of Alberta, Canada.

South of the estuary of the St. Lawrence is the peninsula of Nova Scotia, washed upon the west by the Bay of Fundy, remarkable for its tides, which reach a height of sixty or seventy feet. An arm at the head of this bay is called the Basin of Minas, and is mentioned by Longfellow in "Evangeline."

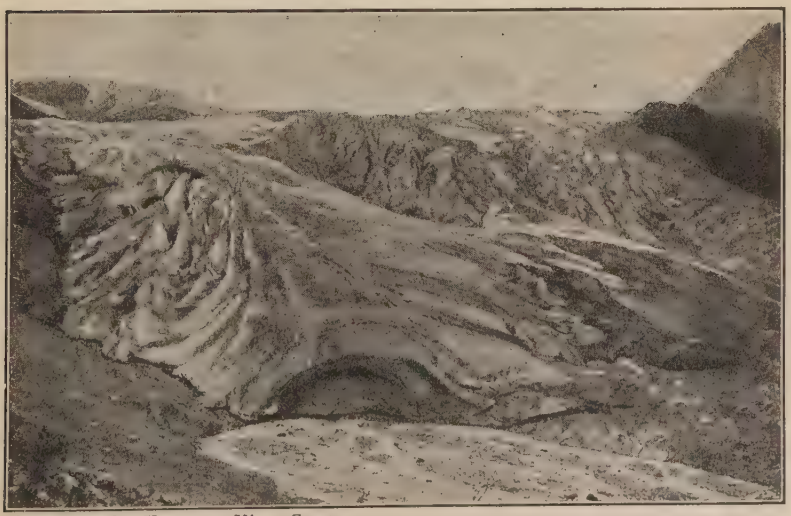
Surface. The surface of Canada comprises parts of the three great sections into which the surface of North America is divided. In the west the principal highlands extend from the Arctic Ocean to the boundary of the United States. The plateau which bears the mountain ranges is somewhat lower than in the United States. Mt. Logan, the highest point in Canada, is 19,539 feet above sea level. It is in the Coast Range, which borders the Pacific Ocean.

Near the southern boundary, the mountains of the west are rugged and very high. Many are capped with perpetual snow, and the valleys contain great glaciers.

Both parts of the secondary highlands exist in Canada.

South of the St. Lawrence River is found the northeastern end of the Appalachian Mountains. North of the river is the Laurentian plateau.

Between the principal and the secondary highlands is the great central plain. The northern slope of this plain is divided from that part which lies to the south, chiefly in the United States, by a slight ridge called the Height of Land. If a line be drawn from Melville Peninsula southwest to where the boundary between Canada and the United States crosses the Rocky Mountains, it will divide the central plain in Canada into two fan-shaped sections, the handle or point of each being in the southwestern corner of the plain. The northern part is broadest at the north and slopes upward from the Arctic Ocean. The southern part of the Canadian plain, which is the middle section of the Great Central Plain of North America, is broadest in the east and slopes upward from Hudson Bay.



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Wapta Glacier, Canadian Rockies. From the edge of the slowly melting ice a stream takes its source.

Questions

(Turn to the maps, pages 8 and 32.)

1. How does the Rocky Mountain plateau of Canada differ in extent from east to west from that part of the plateau which lies in the United States?
2. What mountain ranges are upon the Canadian part of this plateau?
3. In what direction do they extend?
4. How long is the Rocky Mountain region of Canada? How does it compare in length with the section in the United States? In Mexico?
5. What is the highest peak in Canada? How does it compare with the other lofty peaks of North America?
6. Which plateau is the broader, the Laurentian plateau or the Appalachian Mountains? In what direction does each extend?
7. Where is the Height of Land? (Page 35.) In what direction does it extend? What river basins does it divide?
8. In what directions does the great central plain slope in Canada?
9. What parts of the plain are lowest?

Exercise

Describe the Pacific coast of Canada. Mention the features which show that it is a sinking coast.

Drainage. The rivers of Canada belong to four drainage basins: the Atlantic, the Hudson Bay, the Arctic and the Pacific systems. The St. Lawrence is the chief river that flows into the Atlantic Ocean, and is the most important river of Canada. It drains the Great Lakes, which are a gigantic natural reservoir, and therefore the flow of water is constant. It is seven hundred forty miles long from Lake Ontario to the Gulf of St. Lawrence, into which it flows. Its mouth is an estuary, from seven to ninety miles wide, formed by the sinking of the coast and the drowning of a wide valley.

The scenery along the St. Lawrence is not excelled for beauty by that along any other river in the world. Perhaps the most picturesque section is the Thousand Islands, in a wide part of the river, extending for forty miles below Lake Ontario.

The Saguenay River, which flows into the estuary of the St. Lawrence, is remarkable for its scenic beauty.



A lumbering village on the Saguenay River, Province of Quebec, Canada.

The Gulf of St. Lawrence, sheltered by Newfoundland and other islands, the broad mouth of the river, its depth and uniform water supply, its location directly opposite the chief ports of Europe, three hundred miles nearer England than the more southern ports of the United States, led to the early settlement of this part of North America and to the development of the valley of the St. Lawrence. Of the nine million inhabitants of the whole Dominion over five million are settled along this river and its tributaries.



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Niagara

There are several conditions which interfere with the full commercial development of the St. Lawrence. On account of the cold winds from the north and west in winter, the river is frozen, and its trade is turned to more southern ports in the United States, and to the railways. In its middle course the river is interrupted by rapids, the principal ones being the Lachine rapids, just above Montreal River steamers descend these rapids, but on the return upstream pass through a canal built around them. The passage of vessels from the St. Lawrence through the lakes is again interrupted by the Niagara Falls. Over a precipice 161 feet high, between Lake Erie and Lake Ontario, the tremendous volume of water collected in the lakes is poured. Navigation is made possible, however, by the Welland Canal. Farther west, the rapids in the St. Marys River, connecting Lake Huron and Lake Superior, have been paralleled by the Canadian



Falls.

Sault Ste. Marie Ship Canal, and by the "Soo" canal in the United States.

The Hudson Bay receives many rivers from the Laurentian plateau, draining numerous lakes, the relics of the ice age. Of the rivers that drain into the Hudson Bay from the central plain the Nelson-Saskatchewan is the longest and most important. The total length of this river is about nineteen hundred miles. Its most western tributaries rise on the eastern slope of the Rocky Mountains, and others, like the Red River, rise upon the divide between the Hudson Bay basin and the basin of the Mississippi-Missouri. Much of the valley of the Saskatchewan was formerly the bed of a broad lake, and the soil consists of the alluvium, or rich earth, washed into the lake.

The Mackenzie River flows northwest into the Arctic Ocean. It is 2,100 miles long. Near its source it flows

through fertile lands, but the lower part of the river is frozen a large part of the year. The slope toward the north is slight, and the stream is sluggish. It drains a number of large lakes, and carries quantities of sediment, which is deposited at its mouth. Thus a delta is formed. In summer the river is open for navigation from the delta to the rapids at Fort Simpson.



The Fraser River at Yale, British Columbia, Canada.

The Fraser River is eight hundred miles long, but, on account of the mountainous region through which it makes its way to the Pacific Ocean, it is not navigable for most of its course. Large steamers ascend for one hundred fifty miles from its mouth.

Of the large rivers which rise on the Pacific slope of the principal highlands the Fraser is the only one wholly in Canada. The Yukon and Columbia rise in Canada, but both leave its borders before they reach the sea, the Yukon entering Alaska and the Columbia flowing through the northwestern part of the United States proper.

The Yukon River rises in the principal highlands of Canada, between the Rocky Mountains and the Coast Range, and for the upper half of its course is within the Dominion. It crosses the Alaskan boundary, and thereafter its course is within the territory of the United States. Like the Mackenzie, it is frozen during the long winter. In summer it is possible for boats to pass from the Canadian portion of the river to the Bering Sea. Its length is about two thousand miles, of which more than three fourths is navigable. It is the longest and largest river on the Pacific slope of America.

The Columbia River is the second river in size on the Pacific coast of America. It is over twelve hundred miles long. It rises in the Canadian Rockies, and pursues a very crooked course, filled with falls and rapids, through the gorges of this mountainous region. It flows northwest for one hundred fifty miles, then turns upon its course and flows south for about two hundred fifty miles, and enters the United States. The rest of its course is within our country.

Canada is a country of numberless lakes. Their basins, formed during the melting of the great glaciers which once covered the entire country, dot the forests and plains in the south and are scattered among the frozen swamps of the treeless plains of the north. They are linked with the numerous rivers of Canada, and often form an enlarged part of a river basin, though in some cases the river is known by one name before entering the lake and by a different name after leaving it.

The Great Lakes occupy a valley almost a thousand miles long, and in some places eighteen hundred feet deep. It was once filled by the great glacier which covered this part of North America. When the glacier melted it left great masses of earth, which dammed the valley and divided it into broad basins, connected by narrow straits.

Lake Ontario is the smallest and most eastern of the Great Lakes. The water descends to it from Lake Erie over Niagara Falls, a height of 161 feet, and makes a further descent through the rapids above and below the falls.

So great is the volume of water in the Great Lakes that if the supply of water from the many streams that drain into it should stop, it would take a hundred years for the water which occupies the lakes to flow out over Niagara Falls, if a steady and continuous flow were possible.

Lake Erie is the most southern, and the shallowest of the Great Lakes. Lake Superior, the most western and largest, is the largest body of fresh water in the world. All the lakes have Indian names, except Lake Superior, which was so named by the early French settlers, not on account of its size, but because it is at the head of the St. Lawrence River system and farthest from the Atlantic Ocean.



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The Muskoka Lakes, Province of Ontario, Canada.

Great Bear Lake is the largest lake wholly in Canada. It is larger than Lake Erie. It drains into the Mackenzie River, as do Great Slave Lake and Athabasca Lake. These lakes are very irregular in outline and are frozen for half the year.

Lake Winnipeg is part of the Nelson-Saskatchewan River system, as is the Lake of the Woods, on the boundary between Canada and the United States.

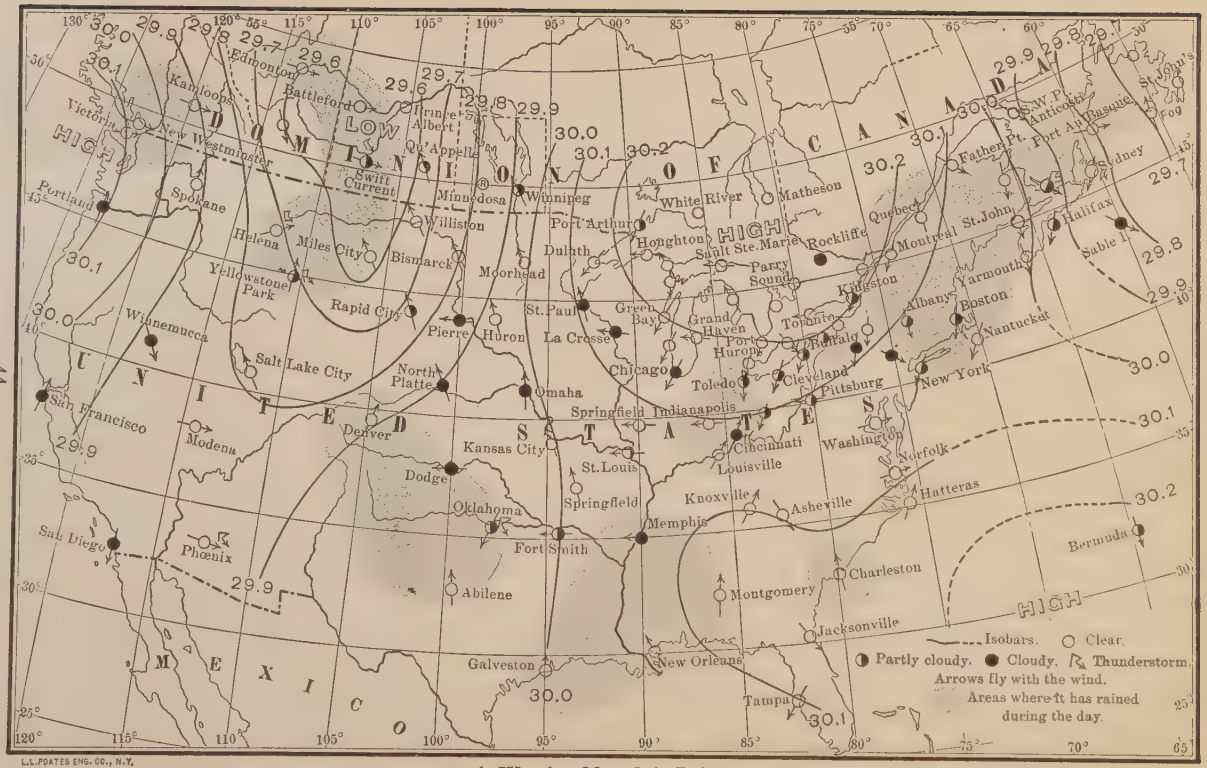
Canada has countless other smaller lakes, almost all of glacial origin. Among the best known and most accessible are the beautiful Muskoka Lakes and, near them, the Lake of Bays.

Questions

(Turn to the map, page 32.)

1. Which of the great rivers of North America are wholly in the Dominion of Canada?
2. Which of the great rivers are partly in Canada?
3. Which river forms part of the boundary with the United States?
4. Why do four of these rivers flow northward, northeast or northwest? Which rivers are they?
5. How many slopes has the Laurentian plateau?
6. Which of the large lakes of North America belong entirely to Canada?
7. Which of the Great Lakes belongs wholly to the United States?
8. Which belong in part to each of the two countries?

Climate. In the far north Canada has an Arctic climate. The winters are long and the rivers are frozen deep. The mouth of the Mackenzie remains frozen long after the upper part of the course, situated to the south, has thawed. Hence the water, obstructed by ice, overflows its banks. The summers are short and cool. The broad plains are covered with grass and flowers of rapid



A Weather Map, July 7, 1911

growth, like the buttercup. Mosquitoes and other insects swarm about the numerous swamps.

In the Temperate Zone we find an oceanic climate along the Pacific coast. The westerlies, blowing over the ocean, bring temperate weather and much moisture to the coast. The moisture is changed into rain or snow almost immediately upon reaching the mountains. Consequently the Pacific coast of Canada, like that of the northwestern United States and southern Alaska, has the heaviest rainfall in America. The copious rains are chiefly confined to the three winter months. Hence, in this section, the rainy and dry seasons alternate. This region does not extend far inland.

The climate of the eastern shores of North America is more severe than the climate of the European and African countries directly opposite on the other side of the Atlantic Ocean. Canada is nearer the Equator than Norway, and this would tend to give it a warmer climate; but Norway is warmed in winter by the winds from the Atlantic Ocean. On the contrary, eastern Canada is cooled in winter by the winds from the cold interior. Labrador in winter is over 30 degrees colder than the western coast of Europe in the same latitudes.

Near the Banks of Newfoundland the warm Gulf Stream meets the Labrador Current, chilled with Polar cold and often bearing gigantic icebergs, broken from the edges of Arctic glaciers. The moisture borne by the warm air above the Gulf Stream is condensed by this encounter with cold. Thus dense fogs are formed which often hang for days over the neighboring ocean, a dreaded danger to shipping. Fogs in this region are especially dangerous because the Banks are near the northern route of the great transatlantic steamers which ply between Europe and North America.

Like most of the globe in middle latitudes, Canada has

winds alternating in direction, according as the centers of low pressure are west or east of a place. When a cyclone or whirling storm approaches from the west, the winds blow successively from the different points of the compass. The winds from any quarter of the east come from the Atlantic, and bring rain or snow. The Great Lakes have a great deal of influence toward equalizing the climate of the Atlantic section of Canada.

The interior of Canada has a continental climate. The extremes of heat and cold are marked. The summers are hot. In winter the Polar winds invade the central plain and make it excessively cold. The region northwest of Hudson Bay has the coldest winter climate in North America. The mean temperature during January is zero or less. The heat and cold are not so hard to bear, however, because the climate of the interior of Canada is dry. The west winds have exhausted most of their moisture before crossing the Rocky Mountains, and the northeasters and other east winds have spent their rain upon the Laurentian plateau and the valley of the St. Lawrence.

Minerals. The principal highlands are rich in gold. There are extensive mines along the Fraser River, and the Yukon River flows through the Alaskan and Canadian Klondike. The Klondike winters are severe; and in order to wash the gold-bearing frozen earth, it must first be thawed by fire. Copper and nickel are found along the Great Lakes. Silver is mined in the Cobalt region in the Province of Ontario. Newfoundland has iron mines. Coal is found on both the Atlantic and the Pacific coasts. There are important coal mines in Nova Scotia and others on Vancouver and the Queen Charlotte islands.

Plants. The forests of Canada are a source of greater wealth than her mines. The maple leaf is the emblem of Canada. The well-watered Laurentian highlands and

the valleys of the Mackenzie and Fraser rivers are heavily wooded. In the St. Lawrence valley the forests contain a great variety of deciduous trees. Deciduous trees lose their leaves in the fall, upon the appearance of frost, and bud out in a robe of fresh foliage each spring. Elsewhere the trees are chiefly spruce, fir, pine and larch. Of these, the larch, or tamarack, is deciduous; the others are evergreen; that is, they are never without green foliage, since their needles, as the leaves are called, grow afresh in the spring before the old ones wither and fall. In the moist regions along the Pacific coast the trees grow to gigantic size. The central plain south of the Mackenzie River is open prairie, the climate being too dry to promote the growth of forests. In the far north, where the summers are short and cool, the trees are stunted, and still further north they disappear. This treeless section of the north is often termed the Barren Lands. The prairies in the southern part of Canada, west of the Great Lakes, are a rich agricultural country. They adjoin the great wheat lands of the northern United States.



A herd of bison, Canada. A herd formerly numbered many thousand animals.

Animals. The musk ox lives in the Barren Lands. Several varieties of deer are found in the forests, and antelope, mountain sheep and goats in the Rockies. On the prairies bison formerly ranged in large herds; but they



Musk ox.

have been killed by hunters, and only a few still live, under the protection of the game laws. Fur-bearing animals live in the cold forests. Mink, lynx, marten, muskrat and other animals are trapped for their pelts.

The ocean, especially in the shallow waters near Newfoundland, known as the Banks, abounds in herring and cod, and fleets of fishing vessels issue from the harbors on the Atlantic coast. Along the Pacific the salmon is the chief food fish. Salmon ascend the Fraser and other rivers to spawn, and are caught in enormous quantities.

On the plains west of the grain lands horses, cattle and sheep are raised. Canadian mutton is highly esteemed.

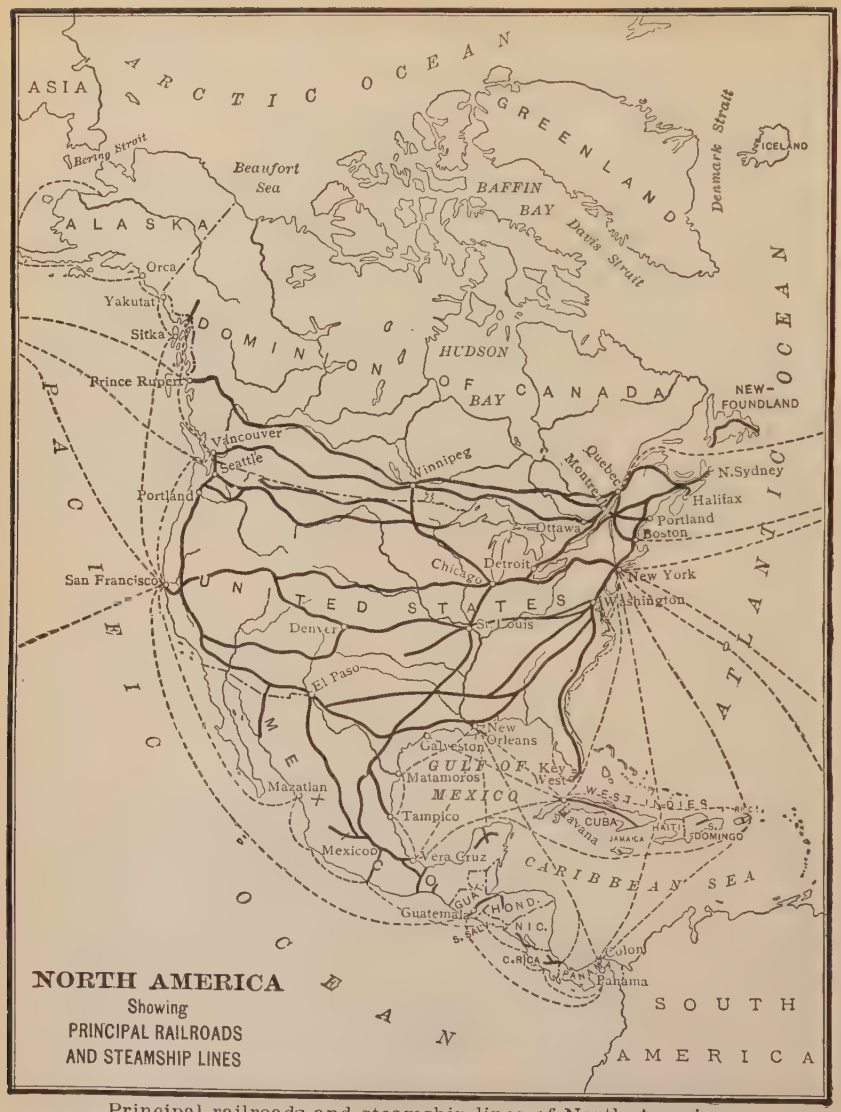
Manufactures. Manufacturing is advancing in Canada. The grinding of spruce logs into wood pulp is a growing industry. The cheap kinds of paper are made of this material. Its low cost makes it possible to sell newspapers and magazines for a small price. Salmon are canned along the Fraser River. Dairy products are an important branch of manufacturing, and Canada leads the world in the amount of cheese exported.

Lumbering gives occupation to many sturdy laborers. The logs are cut in winter, when the snow makes their transportation by land easy, and are floated down the streams in rafts in summer, when possible.

People. In the extreme north, Canada is inhabited by a few wandering Eskimos. A considerable number of Indians live in the forests and on the plains. Many of the people, especially in the Province of Quebec, are descendants of the French who originally occupied the country. The English, under Wolfe, defeated the French, under Montcalm, at the battle of Quebec, in 1759. The tiny islands of St. Pierre and Miquelon, off Newfoundland, are the only French possessions remaining. They are used as fishing stations. The English form the bulk of the population in Canada, and for the most part administer the government. There are, however, many localities along the St. Lawrence where French is the principal language, and its use is legally recognized. Many French-Canadians have emigrated to the mill towns of New England.

In the western and central sections there are many immigrants from the United States, Great Britain, and other countries. Land is given by the government to those who settle upon it. Thousands of American farmers have removed to the wheat fields of the Canadian Northwest. At the close of the War of the Revolution, several thousand Americans, loyal to England, removed from the United States to Ontario and other Canadian provinces.

Commerce. The chief railroads of Canada are the Canadian Pacific, the Canadian National, and the Grand Trunk. The two first named cross North America from the Atlantic to the Pacific, a distance of twenty-nine hundred miles. Halifax and Quebec are the eastern termini, and Vancouver and Prince Rupert, the western. The Grand



Principal railroads and steamship lines of North America.

Trunk connects Chicago, Illinois, with Portland, Maine, and Boston, Massachusetts, *via* Montreal.

Ocean steamships ascend the St. Lawrence to Montreal, but not in winter, for the river is then frozen. Portland, Maine, is the winter port of Montreal; cargoes are

sent from there and from Halifax to Montreal by rail. From Vancouver steamship lines run to Yokohama, Japan, Hongkong, China, and Melbourne, Australia.

The principal products come from the dairies, fisheries, grain fields, forests and mines. The main agricultural exports are wheat, cheese and meat. Of metals and ores, silver, gold, copper and iron are exported. Among the products of the fisheries, canned salmon, lobster and salted cod are the chief exports. A large amount of timber is shipped abroad. The mother country, England, and the nearest country, the United States, control most of the Canadian trade. Exports are sent chiefly to England, but about half the imports, consisting of iron and steel manufactures, coal, foodstuffs, and textiles, come from the United States. Much of our wood pulp comes from Canada.

Government. The Dominion of Canada consists of nine provinces, one organized territory, and three provisional districts. The chief officer of the Dominion is the governor-general, who is appointed by the British sovereign. The laws are made by the Canadian Parliament, whose members are elected by the people.



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A troop of Canadian mounted police.


SOUTHEASTERN CANADA AND NEWFOUNDLAND
SCALE OF MILES
0 100 200 300 400
Longitude West from Greenwich
HUDSON BAY
JAMES BAY
ATLANTIC OCEAN
GULF OF ST LAWRENCE
LABRADOR
NEWFOUNDLAND
ST JOHNS
C. Race
Hamilton Inlet
Strait of Belle Isle
ANTICOSTI I.
MIQUELON
ST. PIERRE (To France)
PRINCE EDWARD I.
CHARLOTTETOWN
CAPE BRETON I.
NEW BRUNSWICK
FREDERICTON
St. John
NOVA SCOTIA
HALIFAX
SABLE I.
C. Sable
Portland
BOSTON
C. Cod
ALBANY
NEW YORK
LONG I.
N. J.
PENNSYLVANIA
CONN.
MASS.
MAINE
QUEBEC
MONTREAL
OTTAWA
TORONTO
Hamilton
ONTARIO
Buffalo
Detroit
London
Cleveland
Toledo
Chicago
Milwaukee
MADISON
WISCONSIN
MICHIGAN
LAKE SUPERIOR
LAKE HURON
LAKE ERIE
LAKE ONTARIO
MINNESOTA
Port Arthur
Fort William
WINNIPEG
MANITOBA
Lake of the Woods
L. Nipigon
L. Mistassini
Nelson R.
York Factory
Winnipeg
L. Winnipeg
L. Manitoba
English R.
Albany R.
Severn R.
Winnipeg R.
Red R.
Ungava Bay
Koksoak R.
Big Seal L.
Lit. Whale R.
Great Whale R.
Big R.
East Main R.
Rupert R.
Hamilton R. (Grand)
Newfoundland
Labrador
Sugluk
L. St. John
Saguenay R.
St. Lawrence R.
Ottawa R.
Muskoka Lakes
St. Marys R.
Sault Canals
Cobalt
Lake Michigan
Lake Superior
Lake Huron
Lake Erie
Lake Ontario
Mississippi R.
Missouri R.
Illinois R.
Ohio R.
Wabash R.
Kankakee R.
Des Moines R.
St. Paul
Madison
Lansing
Springfield
Indianapolis
Columbus
St. Louis
Cumberland
Delaware
Hudson R.
Mohawk R.
Penobscot R.
Kennebec R.
Androscoggin R.
Merrimac R.
Connecticut R.
Lake Champlain
Lake George
Lake Winnipesaukee
Lake Memphremagog
Lake Champlain
Bay of Fundy
Gulf of Maine
Cape Cod
Long I.
Hudson R.
Delaware R.
Susquehanna R.
Potomac R.
Ohio R.
Illinois R.
Missouri R.
Mississippi R.
Red R.
Lake of the Woods
Lake Winnipeg
Lake Manitoba
Lake Superior
Lake Michigan
Lake Huron
Lake Erie
Lake Ontario
Lake Champlain
Lake George
Lake Winnipesaukee
Lake Memphremagog

In the sparsely settled parts of Canada the Indians, and some of the whites, are inclined to be lawless, as is often the case in regions remote from civilization. Here the Canadian mounted police are of great service in protecting the lives and property of the law-abiding citizens who have settled in these regions.

THE MARITIME PROVINCES

The provinces south of the St. Lawrence River border on the Atlantic Ocean, and are sometimes called the Maritime Provinces.

Nova Scotia is an irregular peninsula. Like most of the eastern provinces, it formerly belonged to the French, by whom it was called Acadia; but it was afterwards yielded to England. During a later war between France and England the Acadians were expelled from their farms, placed upon ships, and taken from the country. Longfellow's poem, "Evangeline," is founded upon this event.

The best arable land of Nova Scotia has been rescued from the high tides in the Basin of Minas by dikes. While not so great as the famous dikes of Holland, they are important and interesting. The apple and cherry orchards of Nova Scotia are celebrated.

Nova Scotia and other parts of Canada offer, like Maine, superior attractions to the camper, hunter, fisherman and tourist.

Cape Breton Island is politically part of Nova Scotia.

Halifax, the capital, is on the east coast. It has an excellent harbor, and maintains communication by coastwise steamers with the United States, with Newfoundland, and the cities on the St. Lawrence. It is the nearest port to Europe that is free from ice the entire year. Coal, which is mined in Nova Scotia, is sent here for



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The land-locked harbor of Halifax, Nova Scotia.

shipment and for the use of the British fleet. Halifax is fortified to protect this coaling station.

Prince Edward Island, the smallest of the Canadian provinces, is about the size of Delaware. It is very fertile, and is devoted to agriculture. The fisheries are valuable; lobsters and oysters are canned in large quantities.

New Brunswick, which is somewhat smaller than Maine, adjoins that State to the northeast. Lumbering, fishing, mining and manufacturing are the chief pursuits.

St. John is the largest city in the province. It is at the mouth of the St. John River, which flows through a narrow gorge into the Bay of Fundy. When the high tide comes in, the water falls upstream, against the current. When the tide turns and flows with the current toward the mouth of the river, the water flows over the falls in the other direction. Ships can pass over these reversible falls twice a day each way, between ebb and flood tides.

Newfoundland is a large island, separated from the mainland of Canada by the Gulf of St. Lawrence and the Strait of Belle Isle. The inhabitants are engaged in sealing and fishing. The seals of the North Atlantic Ocean are hunted for their hides, which are tanned, making seal leather. Their fur is not valuable. St. Johns, the chief town, is nearer to Europe than any other port in North America. A large area extending inland from the coast, called Labrador, belongs to Newfoundland. It is important for its fisheries. Newfoundland is a British colony, entirely independent of Canada.



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The Reversible Falls of the St. John River. New Brunswick.

QUEBEC

The Province of Quebec extends along both banks of the St. Lawrence River, most of it lying on the north of this river and extending as far as Hudson Strait. It is the first province of the Dominion of Canada in size. Quebec is more than twice the size of Texas, and larger

than any country in Europe except Russia. Farming, in the south, and lumbering are the chief occupations. This province leads in the production of wood pulp. Cereals and fruit are grown. Stock farming and dairying are extensively carried on.



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Montreal. Mount Royal, from which the city takes its name, is in the distance.

MONTREAL, the largest city in Canada, derives its name from Mount Royal, which is in the city. Montreal is situated on an island where the Ottawa River flows into the St. Lawrence. Although the city is five hundred miles from the mouth of the river, large ocean liners can ascend to it. Montreal is at the head of navigation for ocean-going vessels; for the Lachine rapids prevent their passage farther up the river. Montreal is therefore the point of beginning for the series of canals around the obstructions in the St. Lawrence River, by means of which communication is maintained with the Great Lakes. It is also the main eastern terminal for the

Canadian Pacific and the Grand Trunk railways. The Victoria Bridge spans the St. Lawrence at Montreal. Montreal is nearer to Liverpool, England, than is New York City. Vast sums have been expended in improving and lighting the channel of the St. Lawrence River.

Montreal has many industries. Sugar, cotton and steel goods, tobacco, and many other wares are manufactured. It is the financial and banking center of Canada. In winter, when the St. Lawrence River is frozen, Montreal carries on commerce by rail with Portland, Maine; Boston, Massachusetts; and Halifax, Nova Scotia. The inhabitants are French-Canadians and British.



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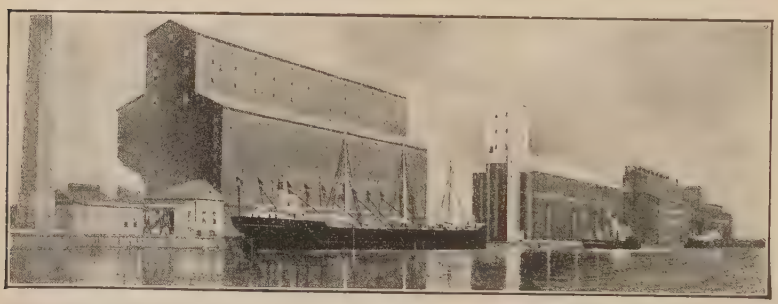
Quebec, as seen from the St. Lawrence River. The Citadel is on the hill at the left; on the right is a great hotel, the Chateau Frontenac.

Quebec is the capital of the Province of Quebec. It is half way between the mouth of the St. Lawrence and Montreal. It is one of the great tourist centers of the world. It is about one ninth the size of Montreal, which it protects from invasion by way of the sea, for Quebec

is the most strongly fortified city in the Western Hemisphere; the modern forts are across the river, at Levis. In 1759, on the Plains of Abraham above the city, the English General Wolfe defeated the French General Montcalm, and captured Quebec. As the result of this victory Canada became a British possession.

ONTARIO

Ontario is the lake province of Canada. It includes the northern shores of the Great Lakes, and it borders on Hudson Bay. It extends as far east as New York, as far



The largest grain elevators in the world, at Fort William, Ontario, on Lake Superior.

west as Minnesota, and as far south as northern Pennsylvania. Its southern third lies in about the same latitude as New England. It is much larger than either France or Germany.

Agriculture is the chief industry, and lumbering is next in importance. The soil, which is largely glacial, is very fertile. Along the Great Lakes lies the fruit belt of apples, pears, peaches, plums and grapes. Cereals and potatoes are largely grown. Hay is an important crop, and Ontario is the chief dairying province in Canada. The timber lands belong to the Dominion Government, and the right to cut trees is leased by lumbermen. The principal minerals are silver and nickel, but

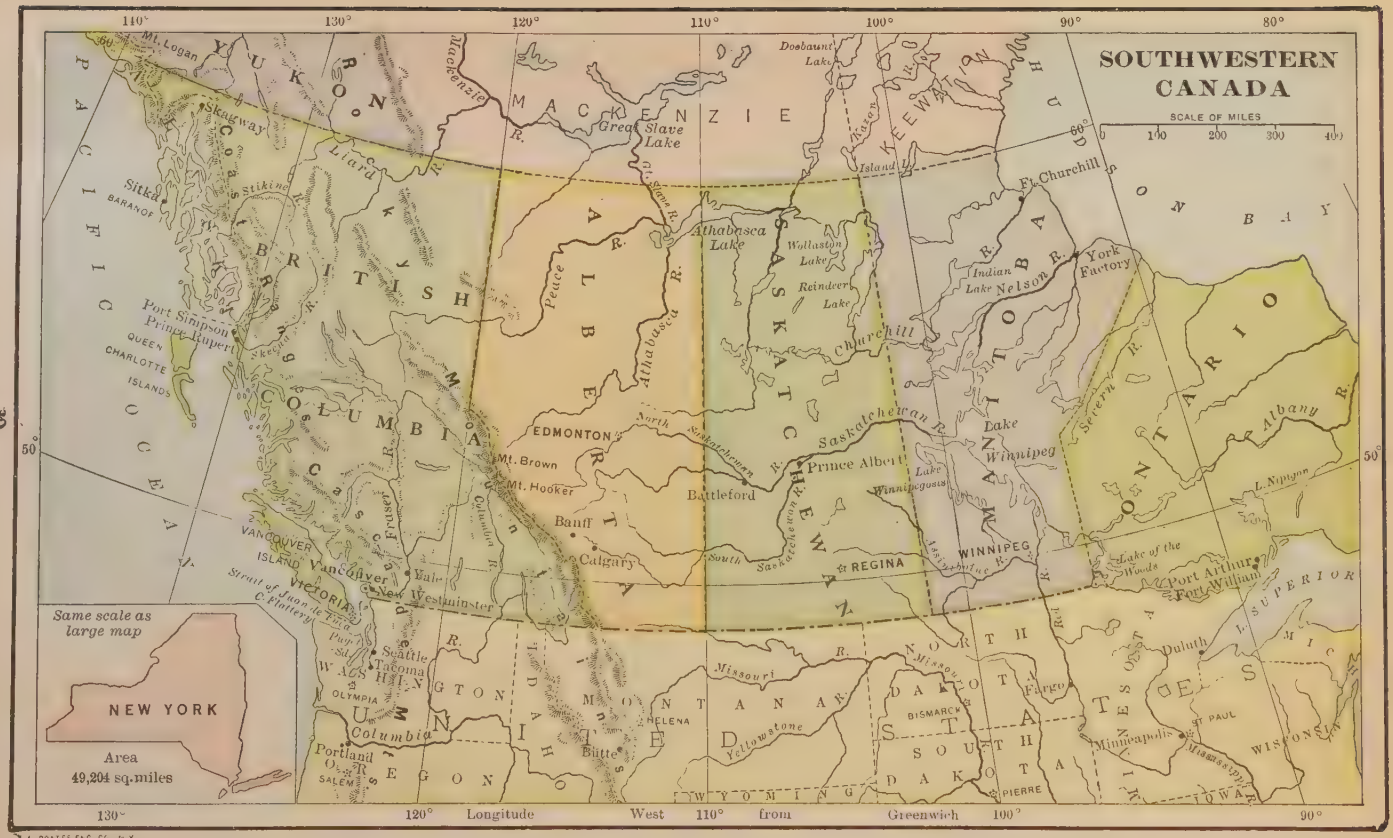
other minerals also exist in rich deposits. The silver mines at Cobalt are very rich.

The shore of Ontario along Lake Superior and Lake Huron is bold and picturesque, but along Lake Erie and Lake Ontario it is nearly level. The lake commerce with the United States is important. Lumber, coal, nickel, furs and other products are sent to the United States. From Port Arthur, on Lake Superior, the products of the great grain fields of western Canada are sent by way of the "Soo" canals, around the rapids of the St. Marys River. There are two canals, the Canadian, in Ontario, and the American, in Michigan. The traffic passing through these canals exceeds greatly in tonnage that of the Suez Canal.

Ottawa is the capital of the Dominion of Canada It is a beautiful city, on the Ottawa River and other streams. It contains the government buildings and Rideau Hall, the official residence of the Governor-General. Ottawa is in the center of the great timber region of eastern Canada, and is one of the greatest lumber markets in the world. Abundant water power led to the erection of sawmills, in which several million feet of logs are sawed every year.



A street in Ottawa, the capital city of the Dominion of Canada.



L. L. POATES ENG. CO., N. Y.

Toronto, on the northern shore of Lake Ontario, is the chief lake port in Canada, and ranks next to Montreal among Canadian cities. Of the lake ports of the United States, Chicago, Cleveland, Detroit, Buffalo and Milwaukee are larger. Toronto is a manufacturing city, and makes machinery, tools and furniture. It is a wholesale distributing center. It is the capital of Ontario.

Hamilton is the leading manufacturing city of Canada, owing to the use of electrical power from falls near by.

SOUTHWESTERN CANADA

Four provinces of Canada border on the United States west of the Great Lakes. They are Manitoba, Saskatchewan, Alberta and British Columbia. The parallel of 49° north latitude is the boundary line between these provinces and the five States of our country which adjoin them on the south. All except British Columbia lie east of the Rocky Mountains in the central plain, which resembles the great plains of the United States. The land is fertile, and stretches in great levels for many miles. It is a region adapted to the growth of wheat, oats and barley, and the farms are large. The Grand Trunk Pacific division of the Canadian National Railways extends from Winnipeg to Prince Rupert, on the Pacific Ocean, near Port Simpson and the Queen Charlotte Islands.



Delivering wheat to the elevators, Manitoba.

This region has been rapidly settled during the past ten years. So many people have gone from the United States into this part of Canada that the immigration is called the "American Invasion."

MANITOBA

Manitoba is nearly as large as Texas and is larger than France. The soil is remarkably fertile, much of it being the bed of a glacial lake. Wheat, hardy grains and flax are the chief products. Manitoba is the oldest province of southwestern Canada. Railways and telegraphs reach to every section, and telephones and electric lights are used in most of the towns.



Main Street, Winnipeg, Manitoba.

Winnipeg, in the southern part of the province, is about midway between the Atlantic and Pacific coasts. It is an important railway center on both the Canadian Pacific and Grand Trunk Pacific railways. The products of the western provinces pass through Winnipeg, which maintains great grain elevators, stockyards and abattoirs. Cargoes destined for shipment to Toronto, Montreal and European ports are sent by rail from Winnipeg to Port Arthur and Fort William, in Ontario, on Lake Superior.

Winnipeg is the capital of Manitoba.

SASKATCHEWAN

Saskatchewan is almost as large as Texas. In the north are uninhabited spruce forests. The southeastern part is an extension of the prairies of Manitoba, and is a great



Cattle, Saskatchewan.

grain-growing area. The quality and yield of wheat are unsurpassed in any wheat region of the world. The long summer days, dry climate and prevailing sunshine are favorable to the perfection of this grain.

In the southwest are rich ranching lands. Great herds of cattle graze there throughout the entire year, for the winters, though cold, are not extremely severe; and on account of the dry climate the snowfall is light, so that the grass remains uncovered.

Regina, in the center of the wheat-growing district, is the capital.

ALBERTA

Alberta is slightly larger than Saskatchewan, but a little smaller than Texas. It comprises the plateau sloping eastward from the Rocky Mountains. Northern Alberta is unsettled. In the forests of the valleys of the Athabasca and other rivers dwell many fur-bearing animals, which, although greatly reduced in number by constant hunting and trapping, still yield many pelts every

year. Southern Alberta is devoted to stock raising and farming. Horses, cattle and sheep are herded upon the treeless plains. Wheat grows well in Alberta, but many sections are deficient in rainfall, and artificial irrigation is therefore employed.

The winds, though often rainless, are usually warm when they come from the west. In winter these warm dry winds, called Chinook winds, from the tribe of Indians which inhabited this section and the northwestern United States, free the ground from snow, and enable the herds to graze even in midwinter.



A great irrigation canal at Calgary, Alberta.

There are rich mines of coal at Banff. Calgary is the principal town. Edmonton is the capital and the center of the fur trade.

BRITISH COLUMBIA

British Columbia occupies the Rocky Mountain highland of Canada. It ranks third in size among the provinces, and is much larger than the State of Texas. The southern half borders on the Pacific Ocean, the northern part being separated from the sea by the narrow strip of southern Alaska. The coast line is irregular, with

deep, narrow fiords and numerous rocky islets. Most of the fiords are too deep for anchorage, but good harbors exist. The rainfall is abundant. The winds are chiefly from the west, and the coast is free from ice during the entire year. The province is almost wholly mountainous, and the scenery is unsurpassed for grandeur.



A sawmill, British Columbia.

The Fraser, Columbia, and other smaller rivers wind in irregular courses, chiefly down the western slope of the mountains.

The mineral wealth of British Columbia is great. Much gold and silver is mined. The coal mines on Vancouver Island and Queen Charlotte Islands afford the chief supply of coal on the Pacific coast. The timber of British Columbia is an important resource. The great rainfall is favorable to the growth of trees, which attain an enormous size. The Douglas fir is the principal tree of this region. The trunks range from two to seven feet in diameter. Farming is carried on in

the fertile mountain valleys, but in many sections the rainfall is too heavy for successful farming. Salmon are caught at the mouth of the Fraser River and packed in tins at the canneries on the banks. The seal-hunting fleet, which pursues the valuable fur seal in the northern Pacific, sails from ports in British Columbia; but this industry is much reduced on account of the decrease in the number of seals.

Commerce. The chief export is lumber, for the most part sawed in mills along the coast, from logs of Douglas fir. Canned salmon is also exported, as are metals and coal. Trade is carried on by the transcontinental railways to the Atlantic coast and by steamship lines to Asia and Australia, California and Mexico.

VANCOUVER derives its importance from its location upon one of the best harbors on the Pacific coast of North America. The harbor is large and deep enough for vessels of any size, yet not too deep to afford safe anchorage. It is landlocked, and thus protected from storms. The city is not situated on Vancouver Island, but on the mainland, and is a terminus of the Canadian Pacific and Canadian National railways.

VICTORIA, the capital of British Columbia, is on Vancouver Island.

TERRITORIES

Besides the organized provinces the Dominion of Canada has the organized territory of **Yukon,** adjoining Alaska, and the unorganized Northwest Territories, comprising the provisional districts of **Mackenzie, Keewatin,** and **Franklin.** Mackenzie occupies much of the basin of the Mackenzie River. Keewatin lies along the western shore of Hudson Bay, and Franklin comprises the islands which lie north of the Arctic Circle.

Yukon Territory is one of the chief gold districts in the

world. The Klondike River, a tributary of the Yukon, flows through a region rich in this precious metal. Dawson, at the junction of the Klondike with the Yukon, is the chief town. Gold is shipped, and provisions, tools, and other supplies imported, by way of the Yukon River, whose upper course is also connected by rail with Skagway, in Alaska.

The Northwest Territories are sparsely inhabited, chiefly by Indians and Eskimos, who are engaged in trapping. The Hudson Bay Company maintains posts or trading stations throughout these regions. Here the trappers exchange their furs for food, clothing, ammunition, and other supplies.

The raccoon is about two feet long. The fur is coarse and the bushy tail is marked with black and white bands. The scarcity of valuable furs has caused the fur of the raccoon to become fashionable.

The raccoon is omnivorous, feeding on small birds and their eggs, mice, frogs, fish, insects, nuts, fruits, maize and sometimes poultry. It dips its food in water, as though washing it, before eating. It goes abroad at night and makes its nest in a hollow limb high up on a large tree.



Raccoon.

Exercises

Make a list of the provinces and territories of the Dominion of Canada. Commit the list to memory.

Draw from memory a sketch map of North America. Locate the provinces and territories and the chief city in each province

Write a full account of Canada.

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CHAPTER III

MEXICO

Location. Mexico is located in the narrow southwestern part of North America, where the grand division is indented by the Gulf of Mexico. The northern half, which is broader than the southern part, is in the North Temperate Zone. The southern half is in the Torrid Zone. Because the Pacific coast of North America curves toward the east from central California southward, most of that State, as well as the States of Oregon and Washington, are farther west than Mexico. On the



other hand, the whole of Mexico is farther west than any part of South America. The Pacific coast of Mexico curves toward the east so far that its eastern extremity is in about the longitude of the Mississippi valley. The curved form of Mexico resembles a horn, or cornucopia, with the point toward the east. Mexico is in the same latitude as northern Africa and southern Asia.

Questions

1. Between what meridians and between what parallels is Mexico?
2. In what zones is Mexico?
3. What part of Mexico extends farthest north? Farthest west? Farthest east?
4. How far is Yucatan from Florida? From Cuba? (Map, page 10.)

Size and Population. Mexico has an area of 767,000 square miles, and a population of about 15,500,000. Mexico ranks third in size among the countries of North America, and second in population.



Laborers, Mexico.

It has about one quarter the area of Canada, and has nearly twice the population. If the northern boundary of Mexico were placed at Vancouver Island, the Isthmus of Tehuantepec would reach to the Gulf of California. Mexico is about three times as large as Texas, the largest State in the United States.

Surface. Most of Mexico is in the southern part of the principal highlands of North America. It is a plateau which varies from six hundred miles in width at the north to two hundred fifty miles in width in the south. The plateau, which is 3,600 feet above the sea in the north, gradually rises in terraces toward the south, where it reaches a height of from six thousand to eight thousand feet. Along the eastern and western edges of the plateau are mountain ranges called the Eastern and the



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Mt. Orizaba, Mexico.

Western Sierra Madre. The loftiest peaks are at the south. Orizaba (18,314 feet) and Popocatepetl (17,784 feet) are the highest mountains. Both are near the narrowest part of Mexico, where the mountain ranges come together, the former peak being in the eastern range and the latter in the western.



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The volcano Popocatepetl, Mexico.

Orizaba and Popocatepetl are volcanoes, as are many other peaks only slightly lower. Most of them, including the two named, are extinct, but some are still active.

Mexico is subject to earthquakes, and the houses seldom exceed two stories in height, for such houses are less likely to be destroyed by shock or, if destroyed, are less likely to cause injury to the occupants.

Between the bordering mountains the tableland is level. In the southern part a basin over seven thousand feet above the level of the sea, and inclosed by volcanic mountains, is known as the Valley of Mexico. The soil is very fertile.

Lower California is a slender, high peninsula, bordered by mountains, extending southward into the Pacific. The narrow Gulf of California covers the sunken valley between it and the Sierra Madre. The largest lowland section is the peninsula of Yucatan, which projects north-



The Valley of Mexico.

ward and, with the opposite peninsula of Florida, partly incloses the Gulf of Mexico.

Drainage. Mexico has few rivers of importance. The Rio Grande, or Grand River, is eighteen hundred miles long. It forms two thirds of the boundary between Mexico and the United States. It rises in the Rocky Mountains and flows several hundred miles through the United States before it reaches Mexico. Most of the rivers are short, and flow from the edge of the plateau to the Gulf of Mexico or the Pacific Ocean. They vary from dry, rocky beds to violent torrents, according to the season. Many of the inland rivers are marked by rapids and falls. Chief among the latter are the falls of the Rio Grande de Santiago, which flows into the Pacific Ocean. Guadalajara is situated near this river, and near by are the falls of Juan Acatlan, the Niagara of Mexico.

Mexico has no important lakes. The largest lake is connected with the Santiago River. In the Valley of Mexico several shallow lakes cause floods when they overflow during the rainy season. On the tablelands there are several drainage basins which do not connect with the sea.

Climate. Half of Mexico is in the Torrid Zone, and the other half is in about the same latitude as Florida. Most of it is so high that but few sections have a truly tropical climate. Yucatan, the chief lowland region, is the

hottest part of Mexico. The land less than 3,000 feet above the sea is usually hot; between 3,000 and 6,500 feet, temperate; from 6,500 to 10,000 or 15,000 feet, cold; above 15,000 feet there is perpetual snow. Mt. Orizaba and Mt. Popocatepetl never cease to wear their snowy crowns.

Mexico is in the region of the northeast trade winds. These winds bring the moisture from the Gulf of Mexico to the plateau. The moisture is condensed by the Eastern Sierra Madre, and descends chiefly upon the coast, where, especially near the mouth of the Rio Grande, the rainfall is very heavy. The rainy season is from May to November. After that the departure of the sun from the Northern Hemisphere brings the horse latitudes, a belt of calms, with dry descending currents, over most of Mexico. The interior of Mexico is dry. The narrow southern part receives some rain, but in the north there are arid tracts similar to those of the southwestern part of the United States, which belongs to the same climatic region.



Loading grain on freight cars, Mexico.

Products. Mexico ranks among the greatest mineral regions in the world. It leads the world in the amount of silver mined, yielding about a third of the world's product. The United States, which ranks second, yields

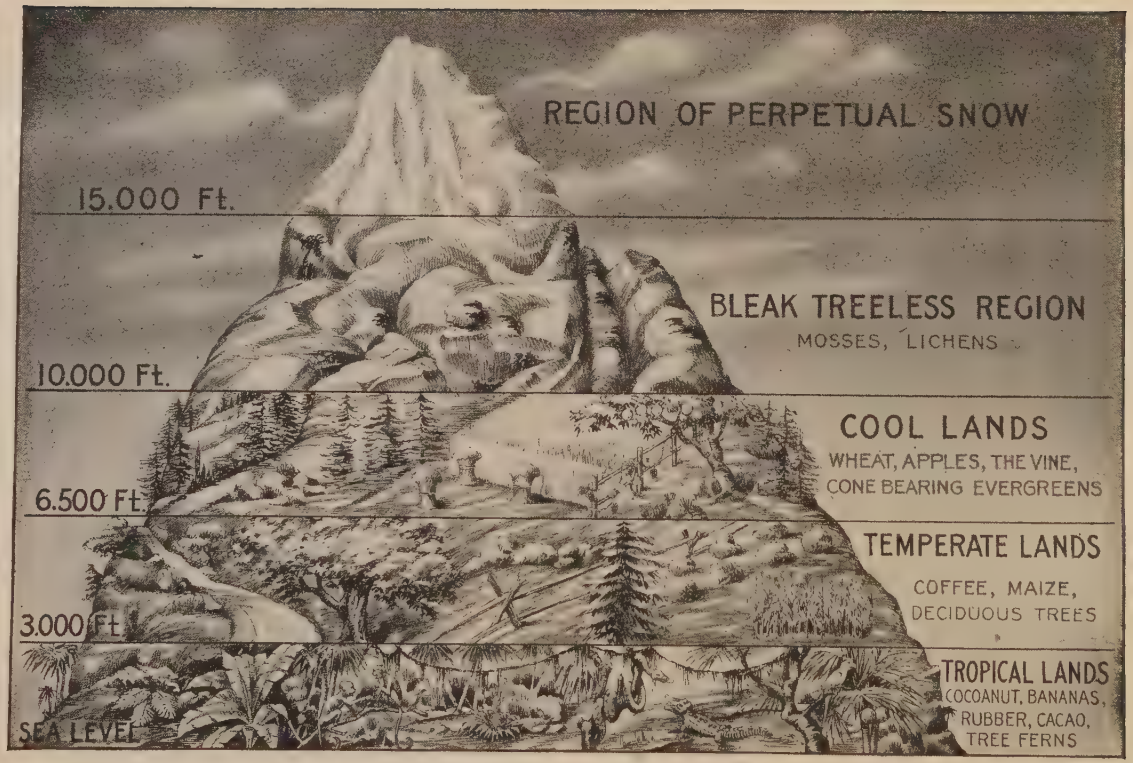


Diagram showing distribution of vegetation according to altitude.



Carrying ore in a Mexican silver mine.

about one fourth. The interior in the Torrid Zone is the chief silver-producing region. Copper, gold and lead are mined. Great fields of coal exist, but the quality is not good. Enormous quantities of petroleum are produced. Opals are found; and Mexican onyx, a beautiful stone used in making furniture and in ornamenting buildings, is quarried. Sulphur is secured from the volcanoes.

The products of the soil vary with the elevation. On the plains and lower slopes of the mountains, the vegetation is luxuriant. Many trees, such as the fig and the mango, grow to huge proportions. Mahogany, ebony and rosewood are hard woods of great value, used for cabinet-making. Rubber is grown in increasing quantities. All tropical fruits, such as the orange, pineapple and banana, grow in profusion. Sugar cane, cacao and coffee produce abundant crops. The vanilla plant is a climbing orchid, which bears a long, fleshy pod. When cured, this pod yields the extract known as vanilla, used in perfumery and for flavoring.

In the dry regions cactuses grow abundantly, as does the American aloe, agave, or maguey, as it is variously called. The juice of this plant is gathered, and when



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Extracting the sap from the maguey plant.

fermented is called pulque. This is an intoxicating beverage, used by the lower classes in Mexico. In Yucatan and elsewhere a species of maguey is cultivated for its fibers, called sisal hemp, or henequin, from which coarse bagging, rope and twine are made. The twine is used on reaping machines for binding the shocks of grain.

On the higher levels, where the climate is cool, tobacco, Indian corn, or maize, and beans are grown. In many sections irrigation is necessary. The Rio Grande and some of the other rivers furnish part of the water thus used, but much is drawn from artesian wells. On account of the large quantity of water drawn from the Rio Grande in New Mexico and in northern Mexico the

lower part of this river is often low or waterless in the dry season.

Grazing is an important industry in the northern part. Herds of sheep and cattle feed over ranges which adjoin those of the United States, and, as the boundary is not always distinguishable, disputes have arisen because the herds pass from one country to the other almost at will.

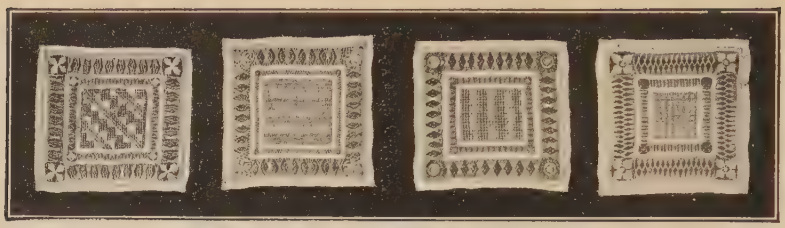
The animals of Mexico resemble those of South America. The tapir, armadillo, jaguar and puma exist in the wild parts of the country. Alligators and monkeys are numerous in the tropical regions. The birds of Mexico are remarkable for their brilliant plumage. They include humming birds, parrots, toucans and many others.

Some toucans are two feet long, with a huge bill of six or eight inches. They have gaudy plumage, and the bill is marked with different bright colors. They feed on fruits, and nest in hollow trees to protect their eggs from monkeys.



Toucan.

Manufacturing has increased within recent years. The methods of refining silver and gold ores, and of treating other metals, have been improved, but in many mines the most primitive methods are still employed. The falls in several rivers, chiefly in the southeastern part, have been made use of to provide motive power for cotton mills. Cloth and blankets are woven, and leather goods,



Examples of Mexican drawn work.

beautifully stamped, are made. Mexican drawn work is made in large quantities by the women, who produce in their humble homes, from linen cloth, articles of intricate and artistic design.



Interior of the Mint, Guanajuato, Mexico.

Commerce. Petroleum is the chief export. Copper and silver also are exported. Of the agricultural products, corn, beans, wheat, rice and cotton are consumed in the country, but henequin, coffee, tobacco, cacao, vanilla, sugar and rubber are exported. The coffee varies in quality. Much of it is used for blending with South American coffees. Cigars and cigarettes are made and tobacco is exported to Cuba to be manufactured. The

imports, most of which come from the United States, are largely manufactured articles of iron and steel, machinery and locomotives, clothing, cotton and woolen goods, and manufactures of wood.

Railways. The trade with the United States is largely carried on by railroads. There are two trunk lines, both of which extend chiefly north and south, through the arid northern regions to the more thriving and populous southern part. The Mexican Central extends to El Paso, in Texas, where connection is made with the Southern Pacific to San Francisco, and to the eastern and central parts of the United States. The Mexican National Railroad passes through Monterey to Laredo, on the Rio Grande. Vera Cruz, the principal port, is connected with the city of Mexico by a remarkable mountain railway. Most of the interior is inaccessible. The roads are poor, and the rudest carts are used. Donkeys are largely used to transport burdens over the narrow mountain roads.



The city of Mexico. The building with towers is the cathedral.



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Vultures in a street of Vera Cruz, Mexico. These birds are the scavengers of tropical America.

Cities. The city of Mexico is in the fertile Valley of Mexico, 7,350 feet above the sea. Although so high, it is surrounded by more elevated ground, and in some sections is swampy. Canals connect the city with other sections. It has a huge drainage canal, through which sewage is carried to a distant lake, but the city is not healthful. As in most Spanish and Spanish-American cities, the heart of the city of Mexico is its plaza, or great public square. This is adorned by a beautiful public garden, and about it are grouped the cathedral and government buildings. The cathedral is the largest and most elaborate church edifice in the Western Hemisphere. It was begun in 1573, and was more than a hundred years in building.

The streets in the city of Mexico are fairly wide, and cross at right angles. They are paved and lighted, and many electric street railways pass to places in the suburbs. The houses of the better class are built of stone, with thick walls. They rarely exceed two stories, on account of the danger from earthquakes. The houses of the poor people are built of adobe, or sun-dried brick, and many of them are very humble. The city of Mexico is a city of great extremes. The wealthy and educated people give to it the appearance of a capital city of one

of the Latin countries of Europe. On the other hand, the most abject poverty exists among the lower classes of the city. It is about as large as Detroit, Michigan.

Vera Cruz is the chief port. It is in the southern part, located on the Gulf of Mexico, on an artificial harbor. The winter storms, called northers, are very severe, and vessels are frequently blown from their anchorage and wrecked. The coast is low and the climate warm. Vera Cruz manufactures tobacco, and in the neighboring mountains the abundant water power has led to the establishment of many cotton mills. Most of the imports which come by ship to Mexico enter at Vera Cruz.

The Pacific ports have better harbors than those on the Gulf of Mexico, but the products of the neighboring country do not afford much commerce.



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The ruins of Uxmal, Yucatan.

Uxmal is a ruined city in Yucatan. Little is known of its early inhabitants, but the remains of temples, palaces and other buildings indicate considerable civilization.

After Columbus had returned to Spain and announced at the court of Ferdinand and Isabella the discovery of America, many expeditions set forth to explore the New World and search out its treasures. Mexico was visited by Cortez and several hundred Spaniards, who landed at the site of Vera Cruz. The Aztec Indians, who inhabited Mexico, were among the more civilized of the native races. At first they regarded the white men as supernatural beings, but soon became suspicious of them. Cortez burned his fleet of eleven ships, to make his men fight the more desperately when they knew their only means of escape was gone. He then set out to visit the native city, Mexico, capital of the Aztecs. After fighting another tribe on the way, he entered Mexico without opposition. Montezuma, the Aztec king, was taken prisoner and forced to give Cortez a large quantity of gold. The Spaniards were presently forced to retreat, but they quickly conquered the country by winning several great battles.

After the Spanish rule became established fifteen Spanish galleons, or treasure ships, sailed every year from Vera Cruz to carry away the wealth of Mexico to Spain. Spain's chief interest in Mexico, as in her other colonial possessions, was to secure wealth. No effort was made to improve the condition of the people or to develop the resources of the countries. As a result, Spain lost possession of Mexico about 1820, as she lost most of her other colonial possessions. After a long period of changing governments and disturbances, during which Mexico was once at war with the United States, a republican government was firmly established in 1867. Since that time Mexico has prospered and progressed.

People. In Mexico the upper classes are cultured, courteous and ambitious. Most of them are of Spanish descent. They are called creoles, which in Mexico, Central

America and the West Indies, means Spaniards born in the country. In Louisiana the descendants of French ancestors who settled in the country are called creoles. The houses of the well-to-do people in the Mexican towns and villages are built about an inclosed court, called a patio, upon which all the rooms open. In the agricultural regions the well-to-do people occupy great plantations, called haciendas.



Making adobe brick, Mexico.

The lower classes are largely Indians, the descendants of the conquered Aztecs and other tribes. They number several millions, and are sluggish and unenterprising. Their huts are built of adobe, or even of grasses and leaves, covering a framework of the limbs and branches of trees. They are the laborers of the land, employed in mining, herding, agriculture, and other pursuits. Their principal diet is beans and maize. Tortillas are a sort of flat wafer, or pancake, made of maize. They are baked by the Mexican women and sold in the open-air

markets which are found in all the towns and villages of the country.

Mexico has great natural advantages, not the least of which is its nearness to the United States. Many Americans have shared in the development of mines, oil-wells, railways, culture of rubber and other plants, and cotton manufacturing.



Making tortillas, Mexico.

Exercises

Draw an outline map of Mexico.

Locate the two ranges of the Sierra Madre. Locate two mountain peaks and name them. Locate Yucatan, Mexico city, Vera Cruz.

Write an account of a tour through Mexico.

CHAPTER IV

CENTRAL AMERICA

Location. Central America is the extreme southern part of North America. It lies southeast of Mexico, and extends to Colombia, in South America.

Surface. The southern part of the principal highland region of North America, diminished greatly in height, extends through Central America, and approaches the Andes of South America. Along the coast of the Caribbean Sea, which borders Central America on the east, there are alluvial plains, formed by the deposits of short streams from the mountains. The entire region is one of earthquakes and great volcanic activity.

Drainage. The rivers are short. Some flow into the Pacific Ocean, but the longer flow into the Caribbean Sea. Lake Nicaragua is the largest lake.

Climate. Central America is in the Torrid Zone. The mountains regulate the climate by affecting the direction of the winds and the amount of rainfall, and by providing moderate temperature upon their upper levels. There are some dry regions in the interior and upon the Pacific coast, but both summer and winter are rainy seasons along the Caribbean Sea.

Products and Pursuits. Agriculture, the collection of forest products and lumbering are the principal industries.

The vegetation resembles that of Mexico, and varies with the altitude. The hot lands produce cacao, rubber, bananas, coconut palms and mahogany trees. The temperate lands produce coffee. Above this region, wheat, maize, beans, potatoes and apples are grown.



The animals resemble those of Mexico and South America. Jaguars, peccaries and monkeys, parrots, humming birds and the quetzal, which is one of the most beautiful birds in the world, reptiles and insects abound in the forests. Upon the temperate highlands grazing is an important industry.

The mineral resources of Central America are undeveloped. Gold, silver and lead are mined to some extent. Except for hand-weaving of silk, cotton and wool, in limited quantities, there is little manufacturing.

Countries. Central America consists of the colony of British Honduras, six small independent republics, and the Canal Zone. British Honduras is on the Caribbean Sea, Salvador is on the Pacific coast, and the remaining countries extend from ocean to ocean.



Jaguar.

BRITISH HONDURAS

British Honduras is a colony of Great Britain. The country is covered with forests. Mahogany and logwood are among the products. The logs are cut down in the interior and floated down the streams to the coast. BELIZE is the chief town. There are no good harbors.

GUATEMALA

Guatemala is the most northern of the Central American republics. It borders chiefly on the Pacific, but has a short coast on the Gulf of Honduras. It is slightly smaller than the State of New York, and ranks third in area but first in population among the republics of Central America.

The largest town is GUATEMALA, the capital, situated upon a plateau in the interior. It is connected by railway with both the Atlantic and Pacific coast.

Products. Coffee is the chief product and export, most of it being sent to the United States. Other products, such as



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Guatemala city, Guatemala, Central America.

hides and fruits, especially bananas, are shipped to New Orleans, New York and other ports, and bring the United States far into the lead as a purchaser of Guatemalan exports. Guatemala imports manufactured goods, chiefly textiles, petroleum and drugs. Most of these come from the United States, France, Great Britain and Germany.

HONDURAS

Honduras has its longer coast line on the Caribbean Sea. It has also a short coast on the Pacific. It is smaller than the State of New York, but ranks second in size among the countries of Central America.

There are rich mineral deposits in Honduras, but they are not extensively worked. Agriculture and grazing are the chief industries. Bananas, coconuts and coffee are the chief vegetable exports. Minerals and hides are also exported. Almost all the trade is with the United States.

Tegucigalpa, an interior town, is the capital. Puerto Cortez, the chief port, is on the Caribbean Sea, and is connected by coastwise steamers with New Orleans, Mobile, New York, and West Indian ports.



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Santa Ana, Salvador.

SALVADOR

Salvador, the smallest country on the mainland of the Western Hemisphere, is on the Pacific coast of Central America. It is slightly smaller than the State of New Jersey, and is the only country in Central America which

has no Atlantic sea coast. It is the most densely populated country in the Western Hemisphere. Belgium, England, and several other European countries, however, have a much denser population, as have Porto Rico and Jamaica among the colonies of the West Indies, and New Jersey and Rhode Island in the United States.

Coffee is the principal product. Sugar, bananas and indigo are also grown and exported. Most of the exports come to the United States, but most of the coffee is sent to Europe. The imports are principally cotton fabrics, boots and shoes, hardware, flour and drugs. The United States, Great Britain and France control most of the trade.

The capital is San Salvador. The principal port, La Union, is connected by steamer with San Francisco. The voyage requires about three weeks.



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Mt. Momotombo, a volcano, Nicaragua.



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A steamboat landing on Lake Nicaragua.

NICARAGUA

Nicaragua is the largest country in Central America. Of all the republics in this region it alone is equal in area to the State of New York.

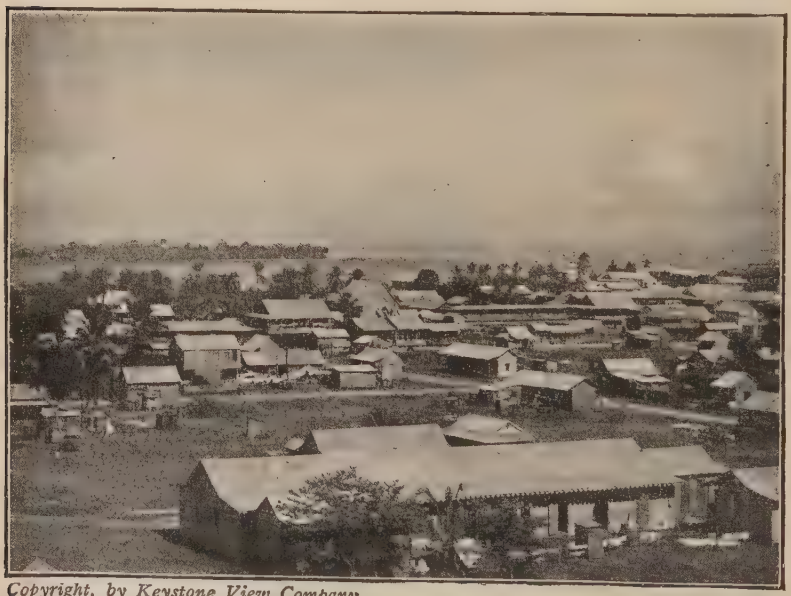
Like the rest of Central America, Nicaragua is mountainous. It has better facilities for water transportation into the interior than the other countries of Central America. The San Juan River and Lake Nicaragua, of which it is the outlet, afford a fine waterway between Granada, at the head of the lake, and San Juan del Norte, otherwise Greytown, at the mouth of the river. Steamers ply over this course several times a week.

The chief product and export is coffee. The largest plantations, producing the best coffee, are on the western coast. Sugar also is raised. On the eastern coast the culture of bananas is the chief occupation. Cattle are raised on the plateaus of the interior.



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The main street in Bluefields, Nicaragua.

Bluefields is the principal port on the Caribbean Sea. It exports bananas. Coffee is exported from Corinto, on the Pacific coast. Managua is the capital.



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Port Limón, Costa Rica.

COSTA RICA

Costa Rica is in the latitude of northern Venezuela in South America.

As in other Central American countries, bananas, coffee, and hides are the chief exports. The United States has about half the trade; Great Britain ranks next.

San José is the capital. It is an interior town, and is connected with both the Atlantic and the Pacific coast by rail. Port Limón, on the Caribbean Sea, and Punta Arenas, on the Pacific, are the chief ports. The former is connected by steamers with New Orleans and New York. From Punta Arenas there are steamship lines to San Francisco. Part of the San Juan River is on the boundary between Nicaragua and Costa Rica, and affords access to the interior from the Caribbean coast.



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The Panama Canal, looking towards Colon.

PANAMA

The Republic of Panama occupies the Isthmus of Panama, the narrow strip of land which joins North America and South America. Although the grand divisions which it links together lie to the north and south, the general direction of the isthmus is east and west.

About half of the surface is mountainous and half lowland, the mountains extending along the Pacific side of

the isthmus. The isthmus has, from the time of the discovery of America, been an obstacle to commerce. Its presence led to the search for a northwest passage around North America, and, from the time of Magellan, compelled vessels to round the southern extremity of South America in voyaging between the Atlantic and Pacific oceans.



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The Pacific entrance to the Panama Canal.

Balboa, the Spanish explorer, was the first to cross the isthmus in 1513, when he discovered the Pacific Ocean.

To avoid the voyage of ten thousand miles around South America, the Isthmian Railroad, forty-nine miles long, was built, and cargoes are unloaded at Panama, on the Pacific coast, or Colon, on the Atlantic, transported by rail across the isthmus, and reshipped to their destination.

After the Suez Canal had proved itself a boon to the commerce of the world, the French engineers who had constructed it attempted to dig a canal across the Isthmus of Panama. They failed, and the machinery was left to rust in the abandoned ditches. The United States has completed this great work.

The Panama Canal is about fifty miles in length, and

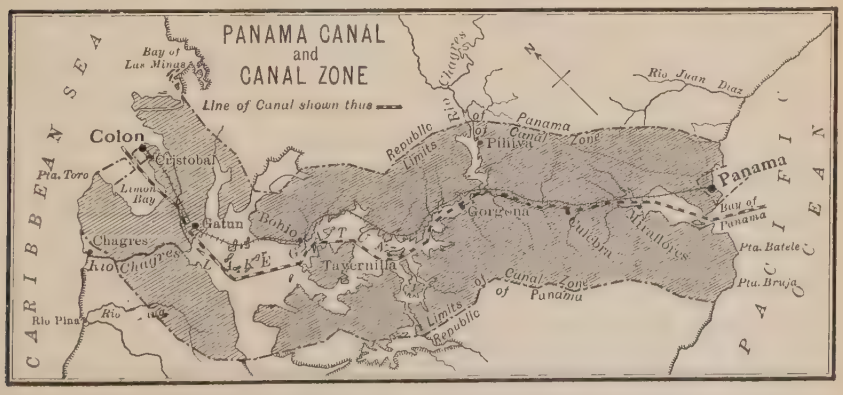
passes through the Canal Zone, which extends five miles on either side of the central line of the canal, but does not include either Panama or Colon. It is under the control of the United States, as are also four small islands in the Gulf of Panama, an arm of the Pacific Ocean.



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The Atlantic entrance to the Panama Canal.

The Republic of Panama extends both east and west of the Canal Zone. Its total area is about the same as that of the State of Maine. PANAMA is the capital and principal port.



Map of Panama Canal and the Canal Zone.

The principal industries of the natives are agriculture and gathering the products of the tropical forests of the lowlands. Bananas are the chief product of the country. Most of them are shipped to the United States.



Scene in Cristobal, Pañama.

SUMMARY

Central America became a Spanish colony upon the discovery and exploration of the New World; but, like Mexico and the countries of South America, Central America threw off the Spanish yoke. Spanish is the language generally spoken. The majority of the population are mestizos, as the mixed descendants of Europeans and Indians are called. There are comparatively few whites, most of them being immigrants, many of whom have secured valuable concessions from the various countries for the development of the mineral industries, the construction of railways, the cultivation and export of fruit, and other similar privileges. There are many Indians, negroes, and mulattoes.

The governments of the Central American republics are still somewhat unstable. The elections are not always fairly conducted, and the defeated candidate and his followers sometimes resort to arms. There is often dissatisfaction with the government, and this leads to rebellion. The chief source of revenue is from the customs, and the armed conflicts are usually waged for their control. Many of these countries have excessive national debts. The United States seeks to aid some of these small sister republics in wise methods of government. The International Peace Tribunal, which met at the Hague, in Holland, has a counterpart in Costa Rica, where a tribunal assembles to settle, without resort to arms, questions affecting the republics of Central America.

Questions

1. In what direction are the countries of Central America from Florida? From New Orleans? From San Francisco?
2. In what direction does Panama extend?
3. In what direction do vessels sail in passing through the Panama Canal from the Caribbean Sea to the Pacific Ocean?
4. Are most of the Central American capitals inland or on the coast? Why?
5. What is the principal export from Central America to the United States?

Exercises

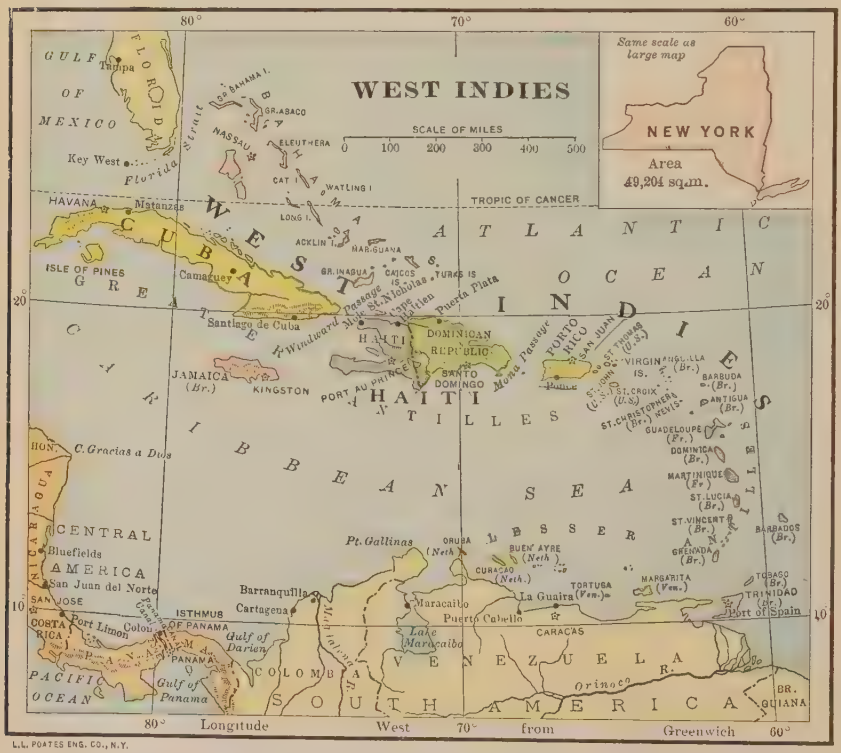
Draw a map of Central America, showing the several countries, their capitals and chief ports.

Write from memory the names of these countries and state an interesting fact about each.

CHAPTER V

THE WEST INDIES AND OTHER ISLANDS

Location. Between the southern point of Florida and the northeastern coast of South America lie a string of islands, like giant stepping stones between North and



South America. East of these islands there is the open Atlantic; west of them the Gulf of Mexico and the Caribbean Sea fill the great indentations, closed on the west by Mexico and Central America. The principal island group of the West Indies is called the Antilles, because it

is stationed before the continent (*ante* means "before") like an outpost guarding the approach from the east. It extends from northwest to southeast, and incloses the Caribbean Sea. The Antilles are in the northern part of the Torrid Zone, like the Philippine Islands. North of the Antilles the Bahama Islands form a barrier in front of Florida Strait, the narrow eastern entrance to the Gulf of Mexico.

Questions

1. Which of the West Indies is farthest west?
2. In what longitude is its western extremity?
3. Which group of the West Indies is farthest east? In what longitude?
4. Which is the most southern island of this group? In what latitude is it?
5. Which is the most northern group of the West Indies? To what parallel of latitude do they extend?
6. What line is the boundary between the Torrid and North Temperate zones?
7. Through which of the West Indies does it pass?

Exercise

State through what waters you would sail from Vancouver to the West Indies. State how you would return *via* Quebec.

THE BAHAMA ISLANDS

The Bahama group is composed of many low coral islands. The Bahamas are the most northerly of the West Indies, and their climate is more healthful than that of the islands farther south. Their location, on the border of the North Temperate and Torrid zones, and in the midst of the sea, gives them a delightful winter climate, and their nearness to the United States makes them a favorite winter resort. The soil is generally barren. The agave, from which the sisal hemp is pro-

duced, grows here. Sponges, coral, shells and tortoise-shell are gathered for export.

The Bahamas are a British colony. Most of the people are negroes who speak English. NASSAU, on the little island of New Providence, is the only important town.

One of the Bahamas was the first land sighted by Columbus on his memorable voyage of discovery. It was probably Watling Island. Here, on Friday, October 12, 1492, Columbus and his followers first set foot upon the land of the Western Hemisphere.

THE ANTILLES

The larger islands of the West Indies constitute the Greater Antilles. They comprise Cuba, the westernmost of the group, Haiti, Jamaica and Porto Rico. The eastern islands, between Porto Rico and South America, are called the Lesser Antilles.

CUBA

Position. Cuba is just within the Torrid Zone. Its northwestern part, between Florida and Yucatan, separates the Gulf of Mexico from the Caribbean Sea. It is about one hundred miles south of Florida.

Size and Population. Cuba, the largest of the West Indies, is over seven hundred miles long, and varies from twenty-five to one hundred miles in width. Its area is about equal to that of Newfoundland, and is slightly less than that of Nicaragua or of the State of New York. Its population is about 3,600,000.

Surface. Cuba is mountainous in the east and west. The central part is a plain. In the south there are large swamps. Most of the coast consists of rugged cliffs, and a line of coral reefs extends along the shore. There are many excellent harbors, with narrow entrances.

Climate. The climate of Cuba is warm and moist. There is a rainy season from May to October. In winter the trade winds bring rain. On account of the surrounding water the heat is never great, but the humidity, in spite of the moderate temperature, is often oppressive.



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Laborers on a banana plantation, Cuba.

Cuba is subject to severe storms called hurricanes, which start in the region of the Caribbean Sea, and which at times devastate the land and wreck the shipping along its coasts. Sometimes these violent winds, starting in the West Indies, reach the Atlantic coast of the United States.

Products and Pursuits. The vegetation of Cuba is luxuriant. Palms, bananas, oranges, lemons, grape fruit, pineapples, sugar cane, coffee and tobacco are extensively grown. Logwood, mahogany and other tropical trees abound. The great development of the beet sugar industry in Germany and other European countries, as well

as in some parts of the United States, has caused the production of sugar cane to decrease in many parts of the world, but in Cuba, where the soil is very rich, the laborers free and intelligent but working for low wages, and the methods of producing sugar from cane highly developed, the sugar industry has remained profitable, and



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A tobacco plantation near Havana, Cuba.

Cuba still leads the world in sugar production. Next to sugar, tobacco is the principal product. There are large cigar factories at Havana. This city gives its name to the choicest brand of tobacco. Cured tobacco, in bales, is shipped to Key West, off the coast of Florida, to be manufactured. Mahogany and cedar are cut in the forests. Cedar is used to box the manufactured tobacco. There are valuable iron mines.

Commerce. No part of Cuba is more than fifty miles from the coast, and there are many harbors, from which goods go to the principal ports. In the north and west of Cuba there are good railroads. Other railroads connect the northern and southern coasts. The chief imports are foodstuffs, manufactures of iron and steel, and

wearing apparel. Almost all the trade is with the United States.

Cities. Havana, on the northern coast, is the capital, largest city, and chief port. It is a city nearly as large as Washington, D. C. The houses are low, and built of limestone, with tile roofs. It has a cathedral and a very large opera house. In the older part of the city the streets are narrow. Havana owes its beauty chiefly to the broad avenues of the newer section of the city and to its large and attractive parks. The harbor of Havana is one of the best in the world. It is land-locked, and has anchorage and docking facilities for a thousand ships. Steamers sail weekly for Spain, England, France, and the United States.

Santiago de Cuba is the principal port on the southern coast of the island.



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Santiago and its harbor, Cuba.

Government. Cuba was formerly a colony of Spain. Long after Spain lost her possessions on the mainland of America she retained Cuba, in spite of almost constant rebellion. Finally the United States intervened on behalf of Cuba, thus bringing about the Spanish-American War. After remaining for three years under the protection of the United States, Cuba became an independent republic.

People. Spanish is chiefly spoken. Most of the people are of Spanish descent. About one third are negroes or of mixed blood. Many of the laborers are Chinese.



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Native Cubans and their home.

REPUBLIC OF HAITI AND DOMINICAN REPUBLIC

The island of Haiti, lying east of Cuba, is nearly as large as the State of South Carolina. It is occupied by two countries: Haiti in the western part and the Dominican Republic in the eastern part.

Haiti is a nominal republic. The officials, and most of the people, are negroes. French is the principal language. Coffee is the chief export; timber, such as mahogany and logwood, ranks next. Most of the trade is with France and the United States.

Port au Prince, on the western coast, is the capital and chief town.

Dominican Republic also is a negro republic. Spanish is the language generally used. Cane sugar and cacao are the leading exports; tobacco and coffee are also important exports. Most of the export trade is to the United States. Cotton manufactures, flour, rice and hardware are the chief imports. They come principally from the United States and Great Britain.



The Plaza, San Juan, Porto Rico.

PORTO RICO

Porto Rico is the most eastern of the Greater Antilles. It is the smallest of that group, and is about three fourths as large as Connecticut. It has a population of more than 1,000,000. The surface is hilly and the climate tropical. There are frequent hurricanes in summer. The island is largely covered with open forests of palms, ebony, cedar and other woods. Agriculture is the principal industry. Cane sugar, tobacco and coffee are raised, and exported principally to the United States. The imports—foodstuffs, machinery and cotton goods—

come chiefly from our country. Porto Rico was a colonial possession of Spain until the close of the Spanish-American War, in 1898, when it came into the possession of the United States. More than half the people are whites. Spanish is the prevailing language, but when the United States took possession of the island, instruction in the English language was introduced into the schools. The children are benefiting by the schools, but most of the adults can neither read nor write.

Ponce and San Juan, the chief towns, are seaports. The former is on the southern and the latter on the northern coast of the island.



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Willemstad, Curaçao, Dutch West Indies. Unloading freight from an American steamer.

JAMAICA

Jamaica is south of Cuba. The soil is fertile, and agriculture is the chief occupation. Tropical fruits, espe-



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A breadfruit tree, Jamaica.

cially bananas and oranges, are the principal exports. Jamaica rum and Jamaica ginger are produced. The pimento tree, a beautiful, much-branching evergreen, is largely cultivated for its berries, which, when dried, are called allspice. The wood is used for making canes. Here, as in Cuba and other islands of this group, is found the breadfruit tree. Young plants were brought to the West Indies from some islands in the South Pacific Ocean by Admiral Bligh of the British Navy, the hero of the mutiny of the "Bounty." The fruit of the tree is a staple food in the Eastern Hemisphere, but is neglected in the West Indies. Jamaica is a British colonial pos-

session. Kingston is the chief town. Most of the inhabitants are blacks and mulattoes. They speak the English language, and many are well educated.

Many immigrants come from Jamaica to the United States.



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Kingstown, St. Vincent, British West Indies.

THE LESSER ANTILLES

The Lesser Antilles are small islands which belong to the United States and various European countries. Great Britain, the Netherlands and France have colonial possessions in the group. The surface of the islands is rocky, and coral reefs are found along the coasts. Most of these islands are volcanic, and the entire region is subject to eruptions and earthquakes. The products are similar to those of the Greater Antilles. Bananas, pineapples, cacao and tobacco are cultivated. Most of the inhabitants are negroes and mulattoes.

Before the time of steamships, most of these islands

were the lurking places for buccaneers, who infested the coast of South and Central America from the mouth of the Orinoco. Daniel Defoe placed the scene of the story of Robinson Crusoe on Tobago, one of these islands.

St. Thomas, St. John, and **St. Croix** were purchased from Denmark by the United States. St. Thomas has an excellent harbor, which is very important as a shipping and naval station.

On **St. Vincent,** an English possession, the volcano



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Fort de France, Martinique.

Soufrière, three thousand feet in height, has caused immense damage by its eruptions.

In 1902 Mt. Pelée, on the French island of **Martinique,** destroyed the town of St. Pierre. Thirty thousand people perished in this disaster.

Barbados, a British colony, is the most densely populated island in the world.

On the tiny island of **Nevis,** adjoining **St. Christopher,** are the ruins of the house in which Alexander Hamilton was born, in 1757. This great American patriot came to the colony of New York at an early age, and was a member of Washington's staff during the Revolution. When Washington became President he appointed Hamilton a member of his cabinet, making him the first Secretary of the Treasury. In that position Hamilton

founded the financial system of the United States so firmly and wisely that the growth of our country has required no important change in its monetary affairs.



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Ruined birthplace of Alexander Hamilton, Island of Nevis, near St. Christopher, British West Indies.

Trinidad, the largest island of the Lesser Antilles, is about eighty miles long. It is the most southern of the group, being close to the coast of Venezuela, in South America, and opposite the northern mouths of the Orinoco River. It is not subject to hurricanes, as are the Greater Antilles. Agriculture is the principal occupation, but a famous asphalt lake, covering about one hundred acres, is the most interesting feature. The distance around the lake is about one and a half miles. Asphalt is a mineral pitch, formed when petroleum issues upon the surface of the earth and becomes thick and hard. Around the

edges of the lake the crust of asphalt will bear a load of workmen and cars, but the middle is soft and bubbling. Asphalt is used chiefly for pavements, roofs and cisterns.

Trinidad is a British possession. PORT OF SPAIN is the chief city and port.

THE BERMUDA ISLANDS

The Bermudas are a small group of coral islands which lie due east of Cape Hatteras, at a distance of about seven hundred fifty miles from the mainland of North America. The soil is fertile and the climate mild. Early vegetables, especially onions and potatoes, are grown for export to the cities on the eastern coast of North America. Large numbers of Easter lilies are grown for the same purpose. These islands belong to Great Britain.

GREENLAND

Greenland is a great island, mostly covered by a glacier. It is in the Arctic regions. The shore, where it is exposed, has many fiords like the coast of British Co-



Polar bear.

lumbia. At points the glacier reaches the sea, and great masses are broken off, forming icebergs, which drift southward, a great menace to vessels until they slowly melt in the warmer waters.



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Eskimos in their summer camp.

Most of the inhabitants are Eskimos. They live mainly by hunting and fishing. Seals, polar bears, walruses and other animals furnish most of their food and clothing. In summer they use the kayak, a boat made of driftwood covered with sealskin, and live in tents covered with skins. In winter they travel in sleighs drawn by dogs, and their dwellings are huts, called igloos, made of stone and moss, or of blocks of ice built in the form of a dome.

By the aid of friendly Eskimos in his service Commander Peary reached the North Pole in April, 1909.

Greenland belongs to Denmark, and some Danes live there and govern the island.



Walrus.

SUMMARY

North America has risen during five hundred years from the condition of a wilderness whose inhabitants were mostly savages, to the second place in civilization among the grand divisions of the globe, Europe alone being its superior. The great development of North America has been brought about by the European settlers. Immigrants are still pouring across the Atlantic Ocean. Although speaking many languages, they intermingle when they land in North America and learn either English or Spanish, according to whether they settle in the northern or in the southern countries.

Next to Europe, North America has the most irregular coast of all the grand divisions. It has the longest fresh waterway and the greatest lakes in the world. The great mass of North America is in the North Temperate Zone. The great central plain is one of the richest and most extensive agricultural regions in the world. The high-

lands, both east and west, are rich in minerals, including coal and iron.

These advantages have brought about the rapid development and marvelous prosperity of North America. Commerce has grown with the rise of many great ports on the excellent harbors. The interior has been rapidly settled because the rivers and lakes afforded access to its great prairies and plains. These have furnished food, and the extensive forests and quarries have furnished materials for building. The excellent water power and the abundance of coal and iron have contributed to making North America a great manufacturing region.

The greatest growth has taken place in the United States, but progress, especially of late years, has been rapid in all the other countries of North America.

Questions

1. About how long is the Pacific coast of Canada? Of the United States? Mexico? Central America?
2. Which lies farther east, Newfoundland or Porto Rico? What is the latitude of each?
3. Which extends farther east, the Great Lakes or the Gulf of Mexico? Which extends farther west?
4. In what direction is Panama from Cuba?
5. In what zone are the West Indies? The Bermudas? Melville Peninsula? Labrador? Nova Scotia? The city of Mexico? Vera Cruz? Central America?

Exercises

Draw from memory a map of North America and locate the chief countries and the capital of each.

Sketch rapidly from memory the Great Lakes. Name each of them.

Draw from memory the Gulf of Mexico and the Caribbean Sea. Locate and name the islands of the West Indies and the countries of Central America. Locate and name all important cities.

Write a full account of the products of North America.

Part II
SOUTH AMERICA


ELEVATIONS
Below 500 ft.
500 to 2000 ft.
2000 to 5000 ft.
Over 5000 ft.
CARIBBEAN SEA
WEST INDIES
Pt. Gallinas
Gulf of Venezuela
TRINIDAD
ISTHMUS OF PANAMA
Gulf of Darien
Lake Maracaibo
Bay of Panama
Magdalena R.
Orinoco R.
Mt. Icutu
Mt. Roraima
PLATEAU OF GUIANA
EQUATOR
Rio Negro
Vol. Chimborazo
Vol. Cotopaxi
G. of Guayaquil
Amazon R.
Tocantins R.
C. Parina
Madeira R.
Tapajos R.
Xingu R.
Tocantins R.
C. St. Roque
Jurua
ANDES MTS.
Mt. Sorata
L. Titicaca
Mt. Illimani
Mt. Misti
PLATEAU OF BOLIVIA
Vol. Sahama
Rio San Francisco
All Saints Bay
TROPIC OF CAPRICORN
DESERT OF ATACAMA
Paraguay R.
Parana R.
Uruguay R.
Mt. Itatiaia
C. Frio
Rio de Janeiro
Mt. Aconcagua
JUAN FERNANDEZ IS.
Pampas
Plata R.
C. Corrientes
CHONOS ARCH.
C. Blanco
FALKLAND IS.
Strait of Magellan
TIERRA DEL FUEGO
Cape Horn
S. GEORGIA
SCALE OF MILES
0 200 400 600 800 1000
Same scale as large map
NEW YORK
Area, 49,204 sq. m.
PACIFIC OCEAN
ATLANTIC OCEAN
PHYSICAL MAP OF SOUTH AMERICA
80 70 60 50 40
10 0 10 20 30 40 50
100 90 80 Long. 70 West 60 from 50 Green. 40 30 20

CHAPTER VI

SOUTH AMERICA AS A WHOLE

The land of the Western Hemisphere is divided by the Caribbean Sea and the Gulf of Mexico into two grand divisions. The southern division is South America. It is joined to North America by the Isthmus of Panama, a narrow mountainous barrier between the Atlantic and Pacific oceans, formed by the principal highlands of the continent.

Across this isthmus the United States has constructed the Panama Canal, through which vessels can sail back and forth between the Caribbean Sea and the Pacific Ocean. Vessels which ply between the Atlantic and Pacific ports of the United States are no longer compelled to round the southern extremity of South America. This canal shortens the voyage more than half. The trade routes between Europe and the eastern ports of Asia and Australia have also been changed to pass through the Panama Canal. The Suez and Panama canals make it possible to sail around the world in the Northern Hemisphere.

Questions

(Turn to the map, page 4.)

1. Between which meridians and parallels is South America located?

2. In what direction is South America from Europe? From North America?

3. In what direction is Cape St. Roque from New York? From London, England?

4. Which part of Central America lies as far east as the west coast of South America?

5. What is the latitude of the southern extremity of Africa? Of the southern extremity of South America? Which extends farther south? How many degrees?

Exercise

Sketch from memory, in a circle, as large as possible, a map of the Western Hemisphere. Shade South America. Indicate and name the Equator and the Tropic of Capricorn.

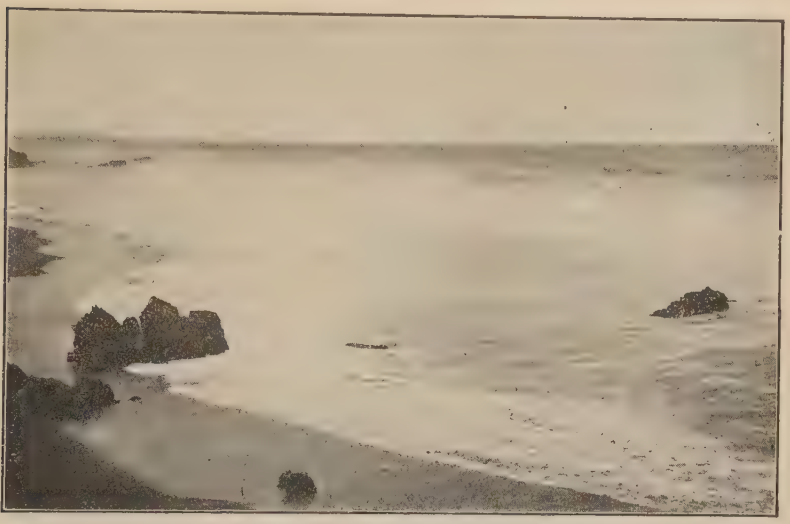
Do this in two minutes.

Location. South America is southeast of North America, its entire mass being east of the longitude of Florida. It lies chiefly in the Southern Hemisphere and in the Torrid Zone. Its northern extremity, however, extends north of the Equator into the Northern Hemisphere, and the southern part extends far south of the Tropic of Capricorn into the South Temperate Zone.

Neither Africa nor Australia, the other grand divisions of the Southern Hemisphere, extends as near to the South Pole as does South America. The Atlantic Ocean is less than seventeen hundred miles wide between South America and Africa, consequently the eastern coast is in close communication with the ports of Europe. The Pacific Ocean, however, broadens toward the south, and South America is farther from the Eastern Hemisphere than is North America.

Form. South America is triangular. Its coast line is very regular. There are few bays or gulfs. In this respect it is like Africa and Australia. On the other hand, the northern grand divisions have an irregular coast line, and many harbors, which promote commerce.

Size. There are three grand divisions larger than South America: Asia, Africa and North America. The other two, Europe and Australia, are smaller. The area of South America is nearly seven million square miles. It is almost twice as large as Europe, and more than twice as large as the United States, excluding the Philippines and Alaska.

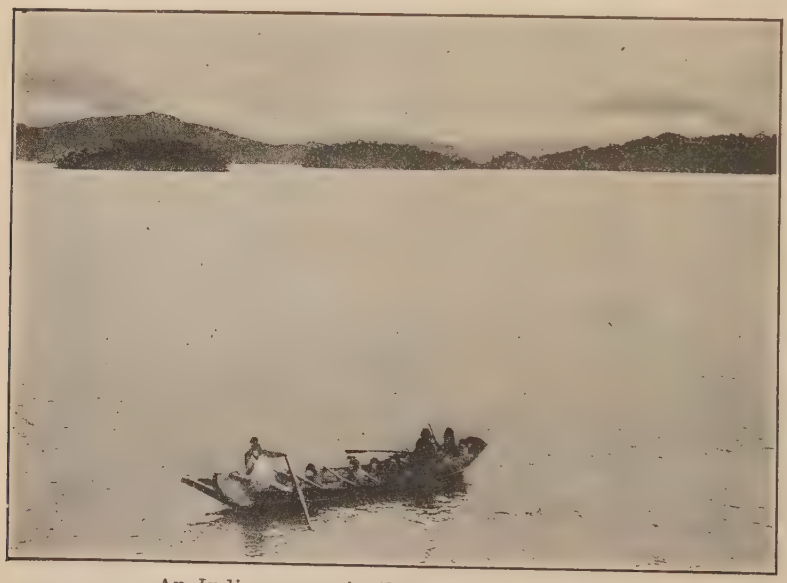


The Pacific Ocean, Mollendo, Peru.

Coast. The coast line of South America makes several abrupt turns, four of which are marked by capes. Point Gallinas is the most northern point of South America. Cape Saint Roque, the most eastern point, and Cape Parina, the westernmost extremity, are in about the same latitude.

Cape Horn, the southern extremity of South America, derives its name from the port of Hoorn, in Holland. It is on an island, south of the mainland. The surrounding region is noted for its violent storms. Vessels avoid the tempestuous passage by sailing through the Strait of Magellan, named in honor of the explorer who, in 1520,

first sailed from the Atlantic into the Pacific. Although Magellan himself was killed in the Philippines, his vessel completed the circumnavigation of the globe and proved that the earth is round. The comparatively peaceful Strait of Magellan lies between the mainland and the rocky, forest-covered island, Tierra del Fuego (Land of Fire).



An Indian canoe in the Strait of Magellan.

The Falkland Islands are an English possession. They are rocky islands, altogether treeless, but have excellent pastures, upon which many sheep are raised. Frozen mutton is exported to England.

The Galapagos Islands, or Tortoise Islands, belong to Ecuador. They are seven hundred miles west of Ecuador, and are of volcanic origin. There are ten principal islands and many smaller ones. Large tortoises were formerly very numerous. They are still captured by the few inhabitants for the sake of their shells.

The Juan Fernandez Islands, in the Pacific Ocean, be-

long to Chile. Upon one of them Alexander Selkirk lived in solitude for five years. He was an English sailor who quarreled with his captain and, at his own request, was landed upon this uninhabited island with a supply of tools, arms and ammunition. The flesh of goats was his chief food. He was taken off by a vessel which visited the island, and he afterward entered the British navy. The story of Robinson Crusoe was suggested by this adventure, although Defoe's story differs almost wholly from Selkirk's experiences, and its scene is laid in the West Indies. Cowper's poem, beginning "I am monarch of all I survey," is founded on the same event.



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Juan Fernandez, the scene of Selkirk's solitary sojourn.

South America has few good harbors, because of the regularity of the coast. The mouth of the Amazon provides anchorage for vessels in the North Atlantic, and the Plata River, one of the world's greatest estuaries, serves a similar purpose for the South Atlantic; but both are

too broad for safe havens. Between the two are All Saints Bay and the magnificent harbor of Rio de Janeiro, with its pouch-like form and narrow opening, and with shores surrounded by beautiful hills. The size and safety of this harbor, and the development of the coffee industry in the surrounding country, have made Rio de Janeiro one of the great ports of South America.

The only important indentation along the Caribbean coast is the Gulf of Venezuela, and its extension, Lake



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Lake Maracaibo, Venezuela.

Maracaibo. They are located east of Point Gallinas, where the low coast curves inland between two spurs of the Andes Mountains.

The Gulf of Guayaquil is the only safe harbor on the Pacific coast. It is situated near the most western part of the grand division.

Questions

(Turn to the map, page 116.)

1. What important indentation is in the extreme northern part of South America?
2. What is the most important indentation on the northeast coast? On the southeast coast?
3. What is the chief indentation on the Pacific coast of South America?
4. How do you account for the Chonos Archipelago?

5. Through what waters does a vessel pass in sailing around South America?

6. Which are farther south, the Juan Fernandez or the Falkland Islands? In which ocean is each? How far is each from the nearest coast?

7. Which is farther from Cape St. Roque, the mouth of the Plata River or Lake Maracaibo?

8. How do these distances compare with that across South America to the Gulf of Guayaquil?

9. In what direction from the mouth of the Amazon is this Gulf? (Notice the latitude of each.)

10. In what longitude is the Gulf of Guayaquil? In what longitude is Cape St. Roque?



Guayaquil, Ecuador.

Surface. The surface of South America resembles that of North America. In the west are the main highlands, the Andes. Like the Rocky Mountain highland of North America, the Andes are part of the great rampart of mountains which guard the shores of the Pacific and Indian oceans. In the eastern part of South America the secondary highlands, the plateau of Brazil, extend parallel to the Appalachian system of North America, from northeast to southwest. At the north, between the two systems of highlands, is a height of land, the plateau of Guiana, comparable to the Laurentian plateau of North America.

The short slope of the main highlands is toward the Pacific Ocean, and the long slope is toward the Atlantic.



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Mt. Cotopaxi, Ecuador

As in North America, the Atlantic slope comprises a central plain of wide expanse between the principal and secondary highlands.

The Andes are three thousand feet higher than the Rocky Mountains. Mt. Aconcagua is the highest peak (23,860 feet). Sorata, Sahama, Illimani and Chimborazo are peaks higher than Mt. McKinley (20,464 feet), the highest point in North America.

The Andes are part of the volcanic belt which surrounds the Pacific Ocean. Many of the peaks are active volcanoes. The coast is rising from the sea, which accounts for the absence of indentations. The rising of the coast is accompanied by great breaks in the masses of rock underground, consequently earthquakes are frequent, and often disastrous to life and property. Mt. Cotopaxi (19,613 feet) is the highest active volcano in the world.

The Andes are the longest continuous mountain chain in the world. The ranges are few in number, thus differing from the Rocky Mountain system, which consists of many ranges. In the north there are three ranges, called the Eastern, Central and Western Cordilleras. Farther south there are but two ranges; here the less important is called the Cordilleras, whether it lies east or west of the principal range, which is known throughout as the Andes. Toward the extreme south there is but one range of mountains.

In the southern part of the Torrid Zone the Andes system widens into the plateau of Bolivia, bordered by two lofty mountain ranges, and having a mean elevation of 12,500 feet. This is the highest part of the Andes.

That the Andes are young mountains is shown by their height and rugged form. The elements have not had time to wear them down to the rounded contours seen in the old mountains along the Atlantic in both North and South



A mountain pass in the Andes, between Argentina and Chile.

America. The great height of the Andes causes their summits to be covered with snow during the whole year. On account of the cold, the snow does not melt, but packs into glaciers (page 14), which exist in considerable numbers even in the Torrid Zone.

The plateau of Brazil is a broad highland, having its greatest width at the north. Its western limits are marked

by the Parana and Madeira rivers. It is traversed by several parallel mountain ranges, which extend from the Plata River to Cape St. Roque. Like the Appalachian Mountains of North America, this is an old region, and as a result of erosion the mountains are low and rounded. They approach close to the shore, and the scenery resulting from the picturesque combination of sea and mountains is inexpressibly grand. The highest point on the plateau is Mt. Itatiaia (9,840 feet).



On the plateau of Brazil.

North and west of the mountain ranges the plateau is chiefly rolling country. In this section, as well as in the valleys between the mountains, the rivers which flow north into the Atlantic or into the Amazon have cut deep into the surface, forming high, steep bluffs.

The plateau of Guiana has but one range of true mountains, the Sierra Parima, and their extension, the Sierra Pacaraima. (Map, page 184.) Icutu (11,000 feet) is the highest peak. The Tumac Humac Mountains rep-

resent the southern edge of the plateau, which extends in a general east and west direction.

Between the Andes on the west and the two plateaus on the east stretches the central plain, which was once the bottom of a great inland sea. The three highland regions then appeared as three immense islands. The plain has three divisions, northern, central and southern, partly separated by the two plateaus, and each drained by a great river.



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On the southeastern coast of Brazil.

Llanos. The northern plain lies between the Andes and the plateau of Guiana. It is the basin of the Orinoco River, and the level lands are called the *llanos*. Throughout the llanos there are boundless expanses of flat grassland which afford pasturage for immense herds of cattle. There are two sections, called the high llanos and the low llanos. The latter are the broad river bottoms, which are flooded from time to time by the rivers, and which are green throughout the year. They are so level and extensive that as far as the eye can see not a hill appears upon the horizon. They afford the best pastures. The high llanos are rolling country, and although sometimes flooded in parts during the rainy season, from June to October, they become dry and dusty the rest of the year, so that the herds which graze there are driven to the low country. The llanos are sparsely supplied with trees.

There are scattered groves among the hills, and trees grow occasionally along the streams, but much of the country is untimbered.

Silvas. The basin of the Amazon forms the central division of the lowlands. The plains of the Amazon are called the *silvas* because they are heavily wooded. They are a dense forest, the most extensive in the world, in which palms, rubber trees, rosewood and other tropical trees grow in profusion. Beneath the trees is a tangled and impassable undergrowth of luxuriant vines. South of the Amazon the forests extend inland about two hundred miles, but the great forest, so called, lies west of the Negro and Madeira rivers, where the silvas are more than a thousand miles in width. In the rainy season the rivers overflow their low banks.



Cattle near the Parana River, Paraguay.

Pampas. The plains of the Plata River are called *pampas*. They are almost treeless, like the llanos, from which they are separated by the forests of the Amazon. In some respects they resemble the prairies of North America. They afford pasturage for countless horses, sheep and cattle, and when tilled produce great crops of wheat. Much of the pampas is covered with impassable thickets of thistles. The pampas grass, a highly ornamental grass with silvery plumes, grows abundantly to a height of from six to twelve feet.



South America. Relief and drainage.

Questions

(Turn to the map, page 116.)

1. Which part of the Andes is in the same latitude as the northern part of the plateau of Brazil?
2. Which extends farther east, the Brazilian plateau or the plateau of Guiana? Which extends farther west?
3. In which zone are the llanos? In which direction from the Equator?
4. In which zone are the silvas? In which direction from the Equator?
5. In which zone are the pampas?

Exercises

Draw a map of South America. Shade the highlands. Locate and name the chief peaks in each of the three highland sections.

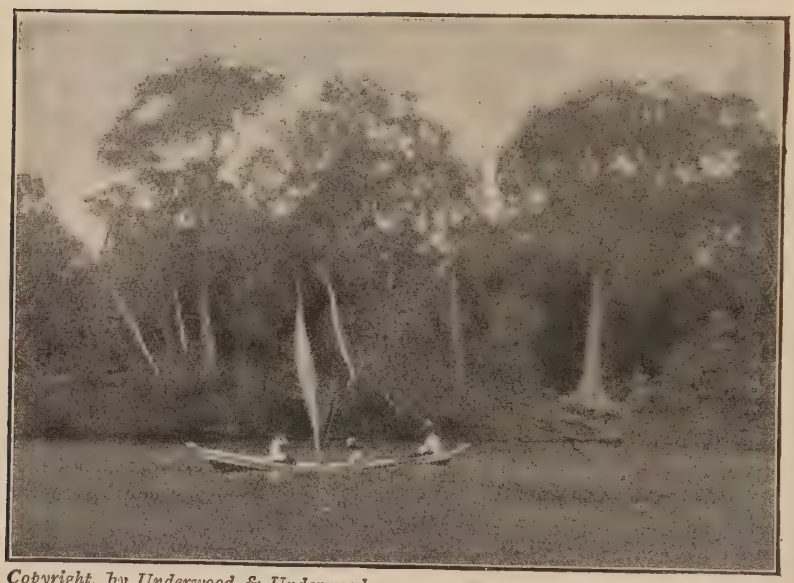
Make a list of these principal peaks. Arrange those of the Andes in order from north to south. Give the height of each peak.

Drainage. The Atlantic Ocean receives most of the drainage of South America. All the important rivers are east of the Andes, because the prevailing winds of the Torrid Zone are from the east, and give up their moisture before they cross the frigid summits of the Andes. The western slopes are so short that there are no important rivers on the Pacific side, even in the extreme south where the rainfall is abundant. In the region of equatorial rains a few streams afford passage from the Pacific to the foot of the Andes. Farther south the streams to the Pacific are mountain torrents, formed by the melting glaciers.

The chief rivers of South America are the Amazon, the Orinoco, the Plata, the São Francisco and the Magdalena.

The Amazon is the largest river in the world. The

longest inland waterway in the world is from the source of the Missouri to the mouth of the Mississippi, but the volume of water that is poured out by the Amazon is more than double that of the Mississippi. This great flood is gathered by many tributaries. The quantity of water varies but little, for as the rainy season changes from north of the Equator to the regions south of the



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The Amazon River.

line the rainfall supplies first the tributaries from the north and then those from the south.

The Amazon is navigable by large steamers for three thousand miles from the Atlantic to the Andes. Vessels that ascend the river are assisted by the prevailing easterly winds, and on coming down they are favored by the current.

The Amazon flows for thirty-five hundred miles through the almost impenetrable forests of the silvas. Its banks are so low that they are frequently washed

away by the current, so that the river has many channels, and often broadens into immense lakes, where vessels sail out of sight of the shore. So great is the volume of water that a broad current flows into the Atlantic for hundreds of miles. The vast quantity of mud carried down makes this current of fresh water distinguishable by its muddy color far from the sight of land.

When the incoming tide ascends the river and encounters the mighty current flowing in the opposite direction, it rushes up the stream in a series of waves ten or fifteen feet high. These break against the current with a thunderous roar like the surf, that may be heard for several miles. This tidal wave is called a *bore,* and it travels for hundreds of miles up the stream with the advancing tide.

The Orinoco River is fifteen hundred miles long, and is navigable for a thousand miles. The mud brought down settles at the mouth and forms a delta, so called from its resemblance to the Greek letter Δ (*delta*).

The Orinoco and the Amazon are connected by a natural canal or channel, called the Cassiquiare River. This is possible because the country between the two basins is so nearly level.

The Rio de la Plata (River of Silver), or Plata River, is an estuary, the outlet or mouth of the Parana and Uruguay rivers. An estuary is the mouth of a river that is very wide and where the tides are especially noticeable.

The Plata-Parana is over 2,500 miles long, and is navigable by small steamers for a thousand miles to the foothills of the Brazilian plateau, by way of the Paraguay River, a great tributary of the Parana River.

The Plata River system flows from north to south, and drains the pampas. Its headwaters are near the source of the rivers which flow into the Amazon from the south. The two basins are separated by a very low divide.

These three rivers are the most important in South

America. The Orinoco flows northeastward, north of the plateau of Guiana, and may be compared with the North American rivers which flow into the Hudson Bay. The Amazon flows east between the plateau of Guiana and the plateau of Brazil, and may be compared with the St. Lawrence River. The Plata River system flows south, like the Missouri-Mississippi system in North America.

Two other rivers are of great length and importance, the São Francisco, eighteen hundred miles in length, and the Magdalena, over one thousand miles long.



The mountainous upper course of the Magdalena River, Colombia.

The Magdalena River is navigable from the Caribbean Sea far into the interior. It may be compared to the Mackenzie River, being the only great river in South America which flows north. It drains the valleys of the northern Andes. (Map, page 184.)

The São Francisco River drains the eastern part of the Brazilian plateau, and, descending to the coast, flows into the Atlantic south of Cape St. Roque. It is navi-



Lake Titicaca.

gable only one hundred fifty miles from the coast. Then for about two hundred miles rapids and great falls mark its descent from the plateau. Above this steamers again ply upon it for about a thousand miles; but on account of the undeveloped country, and the fact that its upper portion cannot be reached from the ocean, its commercial importance is restricted.

South America has few lakes. In this respect it differs from North America, which has many great lakes.

The principal lake is Titicaca, on the plateau of Bolivia, by far the highest large lake in the world, having an elevation of 12,500 feet above sea level. It is one third as large as Lake Erie, and much larger than the Great Salt Lake of Utah, which it resembles in not having an outlet to the sea.

Questions

(Turn to the maps, pages 116 and 144.)

1. What is the character of the surface at the divide between the Orinoco and Magdalena river systems?

2. Which tributary of the Amazon approaches nearest to the Orinoco?

3. What is the character of the country at the divide between them?

4. Where is the divide between the Amazon and Plata river systems?

5. What are the tributaries of each system which rise nearest to each other?

6. What is the nature of the country between them?

7. Where is the divide between the São Francisco and the Plata?

8. Which tributary of the Plata is nearest to the São Francisco?

9. What is the character of the surface between them?

10. In what part of the Andes Mountains is Lake Titicaca? In what direction is this lake from Lake Maracaibo?

Exercises

On a physical map of South America draw the great rivers, and indicate the name of each. Locate Lake Titicaca.

Arrange the five principal rivers of South America in a table like the following in proper order according to their lengths.

Name.	Length.	Direction.	Delta. Yes or no.	Distance navigable from mouth.

Climate. Most of South America is in the Torrid Zone, and much of it has a very warm climate, but as a whole this grand division has a temperate climate. In the South Temperate Zone the surrounding oceans equalize the temperature, and the great rivers and extensive forests in the neighborhood of the Equator have a similar

effect. East of the Andes in the Torrid Zone the mean temperature is eighty degrees, and the temperature rarely varies more than ten degrees above or below this.



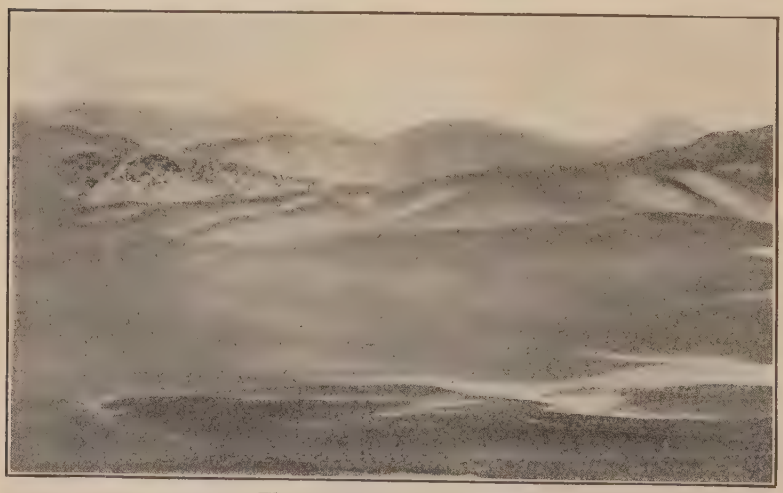
South America. Isotherms, winds and ocean currents.

Although about half of the whole length of South America, from north to south, is in the cool latitudes, this section is comparatively narrow, so that but a small part of South America has the invigorating climate which prevails over the wider part of North America.

The hottest weather is found on the plains, especially

in the north. The Amazon basin is not hot, being tempered by the east winds and shaded by the forests. West of the Andes the climate of the lowlands is about ten degrees cooler than on the eastern side, because of the ocean currents from the south, which wash the western coast. Because of the elevation, the Andes region, as well as the higher parts of the plateaus of Brazil and Guiana, have a temperate and delightful climate, much cooler than that of the plains east of the mountains.

The winds of the Torrid Zone blow from the Atlantic Ocean, being northeast trades north of the Equator and southeast trades south of the line. They distribute their moisture over South America, and in crossing the Andes so much moisture is taken from them that they descend the western slopes as dry winds. Consequently these regions are almost rainless. The Desert of Atacama, near the Tropic of Capricorn, is an extreme result of these conditions. At the northern and southern extremities of South America there is abundant rain west of the Andes. The northern part is in the region of equatorial rains. This is the belt of calms, along the Equator, be-



The Desert of Atacama.



tween the northeast and southeast trades. Here it rains regularly every day, early in the afternoon. In the south the prevailing winds are from the northwest, bringing abundant rain to the coast and less to the eastern slopes of the Andes. By the time these winds reach the interior they are almost dry, although in winter there are often severe rain storms like those of the eastern United States. This part of South America is narrow, and the area affected is not extensive. The steppes of this section are unproductive. They are the only lands of this description on the east coast of any grand division on the globe.

In the tropical parts there are two seasons, the wet and

the dry. This is due to the fact that the belt of equatorial calms, a region of daily rains, travels north and south, according as the sun is overhead in the Northern or Southern Hemisphere. In the South Temperate Zone there are four seasons, as there are in the United States, but in opposite months. Spring comes in September, summer in December and January, fall in April and May, and winter in July.

Commerce. South America sends to other lands the products of her mines, plantations and herds, chiefly raw materials. The countries of South America import chiefly manufactured articles: manufactures of iron and steel, such as tools, machinery, arms and locomotives; food products, such as flour and canned provisions; household furniture and wearing apparel. Great Britain controls most of the South American trade. Although the United States ranks first among the manufacturing countries of the world, our share of the South American trade has been comparatively small. However, with the great increase in the tonnage of our merchant marine, it is rapidly increasing. In most of the countries whose size, enterprise and population make commerce valuable, we have had less trade than the countries of Europe.

There are many reasons for such conditions. Great Britain has the largest merchant marine in the world. The British and other European nations have long controlled most of the steamship lines to South America, whereas the United States does not have frequent and speedy means of communication. Many cargoes which the United States sends to South American countries are carried there in British ships. The possession of ships itself helps to secure trade. The rise of American manufacturing has been recent, whereas England for a long time held the first place. The English secured the trade of the South American purchaser when



Principal railroads and steamship lines. South America.

the United States had few, if any, manufactures to sell abroad. The cost of shipping to most South American countries from Europe is no greater than from the United States, on account of the position of South America, which is much farther east than North America, and therefore relatively nearer to Europe. England is the greatest colonizing nation. Other Europeans also are great travelers and explorers, and many of them have emigrated. In every country of South America there are English and German settlers who largely control



A pack-train of mules on the boundary between Peru and Bolivia.

the industries and who favor the Mother Country and the Fatherland in business. One trait which makes the British and other Europeans successful colonists is their ability to understand the character of the people among whom they settle. It also makes them successful in trade. The agents of the great European establishments are not only familiar with the languages and customs of the South American peoples, but with their tastes and needs. European firms engaged in the South American trade prepare goods which are especially adapted to it; for example, much of the transportation in South America is by pack animals, burros and llamas; consequently, flour brought from Europe is put up, not in barrels or short sacks, but in long, narrow bags, fitted for slinging across the backs of the beasts of burden.

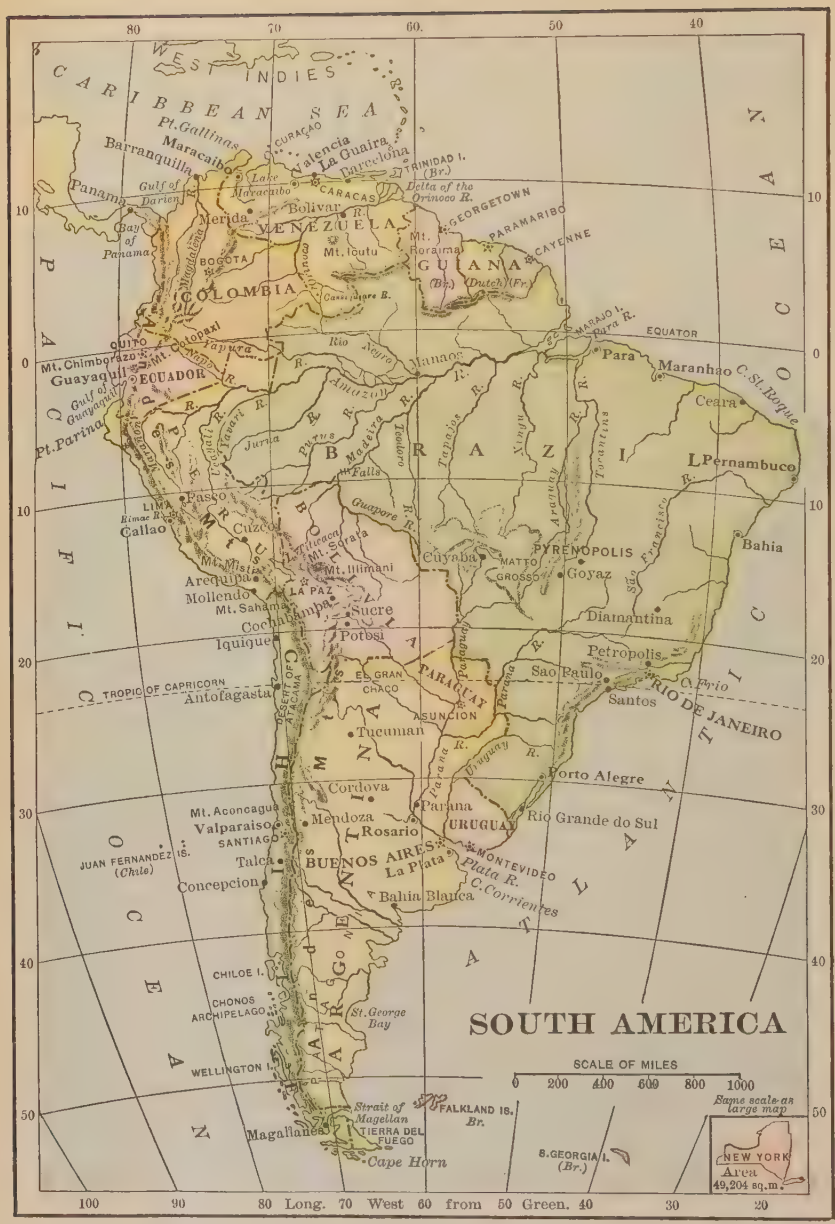
The merchants of the United States are rapidly becoming familiar with the needs of South American commerce, and are constantly gaining an increased share of the business of that great section of the globe.

People. South America is divided among ten republics and three colonies of European powers. Most of the republics have States like our country, as is shown by such names as the United States of Brazil, and the United States of Venezuela.

Portuguese is spoken in Brazil, and Spanish in the other republics. Like Mexico and Central America, all except Brazil are west of 50° west longitude, the meridian which in the 16th century was chosen as the boundary between the Portuguese and the Spanish possessions. There are more people who speak Spanish in South America than in Spain, and the population of Brazil outnumbers that of Portugal. Neither Madrid, Spain, nor Lisbon, Portugal, is so large as Buenos Aires, Argentina, or Rio de Janeiro, Brazil.

There are many Indians. Some of the tribes are savages who haunt the unexplored jungles and forests. Other civilized Indians are herdsmen and farmers. Negroes are numerous; they were formerly slaves, but are now free. The white settlers have intermarried with the Indians and negroes. Contrary to the custom in the United States, persons of mixed blood are regarded as whites and are among the leading citizens of Spanish America. Like the Latin races of Europe the natives of South America are high-spirited, affectionate and lovers of art, music and oratory. They are usually swarthy and of slight stature. The great natural resources attract immigrants from Europe, Asia and the United States.

Many South American boundaries are ill-defined and in dispute, but since Chile defeated Bolivia and Peru and gained the coast that formerly belonged to Bolivia, there


SOUTH AMERICA
CARIBBEAN SEA
WEST INDIES
PACIFIC OCEAN
ATLANTIC OCEAN
Pt. Gallinas
Maracaibo
Barranquilla
Valencia
La Guaira
Barcelona
TRINIDAD I. (Br.)
CURAÇAO
Panama
Gulf of Darien
Bay of Panama
Lake Maracaibo
CARACAS
Delta of the Orinoco R.
Bolivar
Merida
VENEZUELA
GEORGETOWN
PARAMARIBO
CAYENNE
Mt. Roraima
GUIANA
(Br.) (Dutch) (Fr.)
Mt. Cotu
BOGOTA
COLOMBIA
Cassiquiare R.
Rio Negro
MARAJO I.
EQUATOR
Para
Maranhao
C. St. Roque
Ceara
Pernambuco
Bahia
QUITO
Mt. Chimborazo
Guayaquil
ECUADOR
Gulf of Guayaquil
Pt. Parina
Mt. Cotopaxi
Napo R.
Tajura R.
Amazon R.
Manaos
Madeira R.
Tapajos R.
Xingu R.
Tocantins R.
Purus R.
Jurua R.
Javari R.
Ucayali R.
Maranon R.
Pongo de Manseriche
BRAZIL
Falls
LIMA
Callao
Pasco
Cuzco
Arequipa
Mt. Misti
Mollendo
Mt. Sahama
LA PAZ
Titicaca L.
Mt. Sorata
Mt. Illimani
Cochabamba
Sucre
Potosi
Iquique
Guapore R.
Cuyaba
MATTO GROSSO
PYRENOPOLIS
Goyaz
Diamantina
Araguay R.
Tocantins R.
Sao Francisco R.
Petropolis
Sao Paulo
Santos
RIO DE JANEIRO
C. Frio
TROPIC OF CAPRICORN
Antofagasta
ATACAMA DESERT
ES GRAN CHACO
PARAGUAY
ASUNCION
Paraguay R.
Parana R.
Tucuman
Cordova
Porto Alegre
Rio Grande do Sul
Mt. Aconcagua
Valparaiso
SANTIAGO
Mendoza
Rosario
Parana
URUGUAY
MONTEVIDEO
Plata R.
C. Corrientes
BUENOS AIRES
La Plata
JUAN FERNANDEZ IS. (Chile)
Talca
Concepcion
Bahia Blanca
CHILOE I.
CHONOS ARCHIPELAGO
St. George Bay
WELLINGTON I.
Strait of Magellan
Magallanes
TIERRA DEL FUEGO
Cape Horn
FALKLAND IS. Br.
S. GEORGIA I. (Br.)
SCALE OF MILES
0 200 400 600 800 1000
Same scale as large map
NEW YORK
Area 49,204 sq. m.
80 70 60 50 40
10 0
30 40 50
100 90 80 Long. 70 West 60 from 50 Green. 40 30 20

has been no actual warfare over conflicting claims. Europeans have much money invested in the industries and public debt of South American republics, and disputes sometimes arise with a European country. The Monroe Doctrine, which is enforced by our country, prevents any European power from acquiring additional territory in the Western Hemisphere.

The republics of South America elect their presidents. The defeated party has sometimes tried to secure by warfare the success it failed to gain by votes. These South American "revolutions" are less frequent than formerly.

Questions

1. What is the shape of South America?
2. What island group extends northward from the delta of the Orinoco?
3. What is the distance from the Falkland Islands to the nearest coast? From Juan Fernandez?
4. In what direction does the ocean current flow at Cape Horn?
5. In what two general directions do the Andes extend from Lake Titicaca?
6. Which section of South America has a sinking coast?
7. In what part of South America is the greatest area of heavy rainfall?
8. What is the character of the vegetation in this region?
9. By what rivers and into which ocean is this section drained?
10. Why are the isotherms of 70° and 80° farther north in the west than in the east?

Exercise

Make a list of the countries of South America, with the capital of each. Commit the list to memory.

CHAPTER VII

THE UNITED STATES OF BRAZIL

Location and Size. Brazil comprises most of tropical South America south of the Equator and east of the Andes. It covers about half of South America, and is almost as large as the United States, including Alaska, and is slightly smaller than Europe. It is larger than Australia, and has about four times as many people as that grand division.

Brazil projects far into the Atlantic Ocean, and has a long sea coast, although the indentations are few. The western boundary is in about the longitude of Boston, so that the country is nearer the Eastern Hemisphere by almost its entire width than is the east coast of the United States.

Surface and Drainage. Brazil is divided into two parts: the highland region of the southeast and the Amazon Valley, which lies to the west and north of the plateau.

The plateau is hilly rather than mountainous. The broad northern section slopes toward the Amazon and is drained by its southern tributaries. These streams are typical tableland rivers, with slow currents. They are unfit for navigation because of rapids and falls at the point where they leave the plateau and reach the lower level of the central plain. The southern slope of the plateau is drained chiefly by the Parana and Paraguay rivers, of the Plata River system. The São Francisco River is the only important stream independent of these systems. It resembles in character and direction the

tributaries of the Amazon, but, unlike them, flows directly into the Atlantic Ocean.

The Matto Grosso (Great Forest) is a tract of tableland, well watered, and much of it densely wooded. It extends east from the headwaters of the Paraguay River.

The lowlands of Brazil comprise the trackless tropical forest of the silvas, which extends west to the Andes. The slope of this plain is very gradual, and merges into the llanos and pampas to the north and south. Much of it is flooded during the rainy season, and the receding waters leave lakes and marshes.



Scene on the Amazon River, Brazil.

Climate. Brazil is in the region of the trade winds, which bring coolness and moisture from the ocean. The broad bodies of the rivers cool the shaded silvas, so that in the Amazon Valley the temperature averages about eighty degrees throughout the year, and the nights are cool. The country is healthful, although yellow fever occurs at many of the large ports; but with more care as to

sanitation this will disappear. The elevated interior of the plateau region has an especially delightful climate.

Products and Pursuits. The highlands of Brazil contain many valuable minerals. Diamonds are obtained in considerable quantities, but the method of mining is more difficult and the profits are much less than in the great diamond diggings of South Africa. The mineral wealth of Brazil is great, and includes gold, copper and quicksilver; but on account of the inaccessibility of the mineral regions this wealth has not been developed. Iron abounds, and some coal is found, but neither is mined to any extent, chiefly because the coal is better adapted for the production of gas than for manufacturing. Most of the coal used in Brazil is imported.

The mountainous sections are covered with forests, but the tablelands contain much open country. This is largely pasture land, and herding is the most important industry. Farming is not yet carried on by modern methods. In the extreme south much of the region resembles the pampas, differing chiefly in being somewhat higher, and is known as the campos. Sheep and cattle are raised in great numbers. This industry is encouraged by the Brazilian government, which imposes a tariff or tax upon meat and cattle products from other countries.

The northern part of the Brazilian plateau is in the heart of the Torrid Zone. There are plantations of fruit, tobacco, sugar and cotton, and factories for refining sugar. During recent years many cotton factories have been established. The cassava, or manioc, which is native to Brazil, is grown here as well as in the lowlands. The root of this plant yields farina and tapioca, and is the chief food of the Indians.

The collection and preparation of rubber is the chief industry of the Amazon Valley. The trees grow wild, and are scattered through the forest. The rubber col-

lector, who usually lives along the bank of the river, employs Indians and other laborers to travel from tree to tree. A small cut is made in the bark and a cup placed for the thick milky sap to drip into. This is brought to the camp and hardened by dipping a wooden paddle into the sap and then holding it in the smoke of a wood fire. The process is continued, layer after layer being hardened by the smoke, until a great ball of crude rubber is formed at the end of the paddle. This is slipped off and shipped down the Amazon to Para.

In addition to rubber the Amazon Valley produces cacao, used for making chocolate, and the vanilla bean.

Certain trees, as the rubber, the cinchona and palms, thrive in the section which is flooded during the rainy season. Farther back from the river, on the higher ground not reached by the flood, some of the trees attain the enormous height of two hundred feet. In this section is found the Brazil nut, a tall tree. Brazil nuts grow within a hard shell six inches in diameter and half an inch thick. Each shell contains about twenty of the wrinkled, triangular nuts. When ripe the shells fall to the ground. They are collected by the Indians, who split them with an ax, and ship the nuts to Para. There are many coconut and other palms. Trees producing cabinet timber, such as rosewood; dyewoods, such as the logwood and Brazil wood; gums, such as copal, used for making varnish; and medicinal plants such as the sarsaparilla, are also found. The trees and vines are chiefly evergreens. Many bear blossoms of brilliant colors, or provide a lodging for beautiful orchids. In the sluggish streams which supply the tributaries of the Amazon is found the *Victoria regia*, a great water lily with leaves so broad and strong that they are capable of bearing the weight of a man, and with fragrant flowers which measure from one to two feet in diameter.

Nowhere does vegetation attain such luxuriance as in the silvas, and no country in the world has either so large a variety or so great a quantity of plants as Brazil.

The Atlantic coast of the plateau, with the country back of it, is one of the most prosperous regions in Brazil. The soil is tinged red from an oxide of iron, and is exceptionally adapted to the production of coffee. Brazil grows four times as much coffee as the rest of the world,



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A coffee plantation, Brazil.

and the cultivation and export of coffee is the principal industry. The coffee plant is a small tree from six to ten feet high. It bears clusters of reddish pulpy berries, each of which contains in a kernel two coffee beans. These beans, when removed from the pulp and washed, are spread in the open air, upon fields paved with concrete, until dry. The skins which cover them are removed, and the raw olive-green beans are placed in bags for shipment. Coffee does not assume its familiar brown color until it has been roasted, and this is done shortly before it is used. The labor in connection with the production of coffee was formerly done by negroes; but of late years many Italian laborers have emigrated to



Coffee pickers bringing the berries to the drying floors, Brazil. The dark spaces are coffee spread on concrete floors.

Brazil, and have largely taken the place of the negroes in coffee culture. Rio de Janeiro and Santos are the chief coffee ports in the world. Rio de Janeiro controls most of the commerce with the United States, and Santos with Europe. Both cities give their names to grades of coffee—Rio coffee and Santos coffee.

Animals. The animals of Brazil are smaller and less ferocious than those of the tropical regions of other grand divisions. The largest animals of the cat tribe are the puma and the jaguar, which are smaller and less dangerous than the tigers and lions of Asia and Africa. Wild dogs and peccaries, or wild hogs, both of which travel in droves, sometimes attack men. Deer are found in abundance. The capybara, which is three or four feet long and weighs a hundred pounds, is the largest rodent in the world. It lives along the rivers in colonies, is inoffensive and its flesh is edible. The tapir is the largest animal of the silvas. The sloth, anteater and arma-

dillo are other characteristic animals of the Amazon Valley. The flesh of the latter is commonly eaten, and is regarded as a delicacy. The rivers abound in alligators, turtles, and fish. Some of the turtles are very large. Their flesh and eggs and the fish caught in the rivers comprise the food of the Indians who dwell in the



Tapir.

forests. In the Amazon River the manatee or sea cow is caught for its oil, by means of harpoons. The boa constrictor is a huge serpent, from twelve to twenty feet long. It is not poisonous, but kills its prey by enfolding and crushing it. Long-tailed monkeys are found in great numbers in the tree tops, and there are several varieties of large bats. More than fifty kinds of humming birds, as well as toucans, parrots, and other birds of brilliant plumage, enliven the tropical forest. Insects are prolific. Some spiders have a spread of seven inches, and consume small birds. The white ants are a serious detriment to man, often compelling, by their invasion, the



Armadillo.

abandonment of cultivated fields. Immense moths, butterflies and beetles, of strange forms and gorgeous hues, abound, and are used by the Indians in making barbaric ornaments.

Transportation. The long coast line of Brazil is favorable to the development of foreign commerce, but this advantage is offset to some extent by the scarcity of land-locked harbors. Commerce with the United States is carried on by several lines of steamships between New York



Boa constrictor.

and Brazilian ports; the voyage to Rio de Janeiro takes about eleven days.

The Amazon River and its tributaries are the principal, almost the only means of access to the interior. Several lines of steamers ascend the broad Amazon. Navigation is possible to the foot of the Andes, and not only Brazil, but the countries of the Northern Andes, employ this route to Europe and North America.

The mountains extending parallel to the southeastern coast of Brazil have had a detrimental effect upon the development of the States in the interior of the Brazilian plateau. They prevent any considerable river parallel with the Amazon to the south of that stream, and interfere with navigation upon the streams which water the plateau. Because of the position of these mountains, and because almost all of the interior of Brazil is drained by rivers which flow north or south, instead of east, this section has no direct and ready natural communication with the coast. Much of it must await the construction of railways. Communication with the Brazilian coast therefore sometimes entails a roundabout journey down the Parana, Paraguay and Plata rivers to the sea, and then another journey north along the coast.

Brazilian railroads are confined to the coast, and most of them are in the coffee lands. In time other railroads will be built, especially between the coast and the interior of the plateau, around the falls and rapids of the Madeira and other rivers.

The enormous extent of Brazil, and its magnificent system of interior waterways, make possible a very great growth in commercial importance.

Commerce. The coffee exported is more valuable than all the other exports together. Other tropical products exported are sugar, cocoa, maté (tea), rubber and cotton. Meat, hides and leather are also exported. The imports

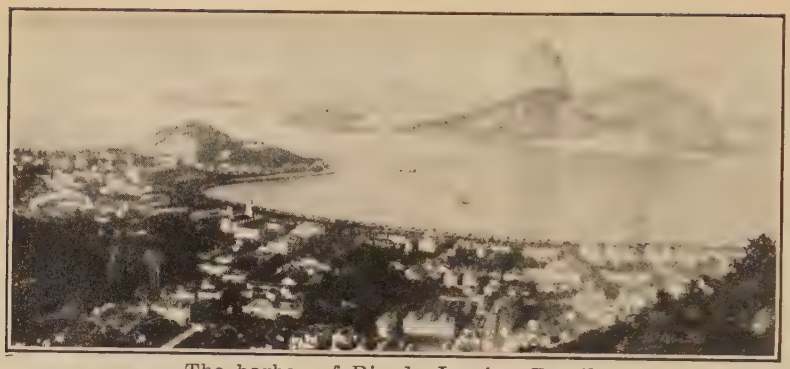
are chiefly manufactures from the United Kingdom, the United States and France, and wheat, flour and jerked beef from Argentina.

About half of the exports from Brazil are sent to the United States, and about half of the imports come from our country. These consist of coal, kerosene, machinery and foodstuffs. Wine is imported from France, Spain and Portugal. Bordeaux, Lisbon and Madeira are important ports in the Brazilian trade, but Great Britain controls much of the commerce by way of Liverpool and Southampton. Great Britain furnishes about a fourth of the imports. There are cables to New York and Lisbon.

Government. The United States of Brazil is a republic like the United States. It comprises twenty states and one territory. Rio de Janeiro is the capital, but on account of the rapid development of other sections, as well as the heat of the coast region, it has been proposed to remove the seat of government to a site near Pyrenopolis, in the State of Goyaz, on the plateau of Brazil.

People. Brazil was originally a Portuguese possession. The Portuguese language is generally spoken by the whites, negroes and half-breeds, who comprise the civilized population. The Brazilian census is not wholly reliable, but it is certain that the Portuguese language is spoken by three times as many people in Brazil as in Portugal. There are many savage Indians in the silvas, whose hostility endangers travel upon the Amazon and its branches. In the cities, and upon the plantations, both of which are chiefly near the coast, there are many settlers from Germany, Great Britain and the United States. Upon the plantations there are many Italians.

Cities. Rio de Janeiro, with a population of 1,000,000, is the capital and, next to Buenos Aires, is the largest city in South America. The great pear-shaped harbor, with its narrow entrance and mountainous shores, is the



The harbor of Rio de Janeiro, Brazil.

most picturesque harbor in the Western Hemisphere. The city itself is one of the most beautiful in the world. In the old part of the city are many ancient buildings of Moorish architecture, and the streets there are very narrow. The principal business street is so narrow that it is restricted to foot passengers, except upon extraordinary occasions, when vehicles are permitted. The new sections of the city are planned according to modern conceptions of municipal beauty, and show the influence of the great capitals of Europe, for the people of Brazil,



Municipal Theater, Rio de Janeiro.

as of the other South American countries, have close connections with Europe as well as with the United States.

The Botanical Gardens of Rio, as the city is briefly called, are noted throughout the world. They contain specimens of trees and plants from many countries and climes. Those of the tropics thrive especially well, for Rio is situated on the southern border of the Torrid Zone. The avenue of royal palms is very beautiful.

Rio is not a healthful city, and the well-to-do classes spend the rainy season in the highlands back of the city, which are near by, and where the scenery is grand and beautiful, and the climate, on account of the elevation, is temperate and healthful. Chief among the resorts of the plateau is Petropolis. Here most of the



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Santos, Brazil.

foreign ministers maintain their legations, and here the President of Brazil has his summer palace.

Santos is the chief port of the coffee district, and exports more coffee than any other city in the world.

São Paulo is a large manufacturing city.

Para, the chief city in the Amazon Valley, exports more rubber than any other port in America. It is situated on the Para River, about eighty-five miles from the ocean.



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The water front, Para, Brazil.

This river is connected with the estuary of the Amazon. Small vessels approach the city, but larger ones must anchor farther down the stream. The products of the silvas are shipped by way of Para.

Manaos, on the Rio Negro, six miles above its mouth in the Amazon, is the most important place in the interior of the Brazilian lowlands. Regular lines of steamers carrying rubber and other products of the Amazon Valley ply between this port and Rio de Janeiro, the ports of Europe and of the United States.

Bahia and Pernambuco are large cities and the chief



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A shipment of crude rubber, Para, Brazil.

ports for the fruit, tobacco, sugar and cotton-growing region south of the Amazon.

Pernambuco is the first port sighted by vessels after they round Cape St. Roque. The harbor is protected by a sandstone reef, which has been artificially extended, but is shallow, and large vessels are forced to anchor in the open roadstead, so that landing is often difficult.



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The harbor of Bahia, Brazil.

Bahia is situated upon All Saints Bay, one of the best harbors in America. The city is situated upon a rocky bluff one hundred feet high, overlooking the bay. The buildings descend to the water's edge. More whaling vessels resort to Bahia than to any other harbor in the world.

Hides and dairy products are exported from Porto Alegre. This city and others in the same section are engaged in the manufacture of carpets and other textiles from the wool raised in the district.

There are no important cities in the interior of the plateau section.

Exercises

On a physical map of South America mark the boundaries of Brazil. Locate the chief cities.

Write a complete account of Brazil.

CHAPTER VIII

ARGENTINA

Argentina derives its name from a word meaning silver, but this metal is not found in the valley of the Plata.



Probably the name was given because the Indians wore silver ornaments brought from the Pacific slope.

Location. Argentina occupies most of temperate South America. Its Bolivian boundary is north of the Tropic of Capricorn. It occupies the eastern slope of the Andes and extends to the Atlantic Ocean.

Size. Argentina is the second largest country in South America. Brazil covers about half of South America



A ranch in Argentina.

and Argentina comprises about a third of the remainder. It is about one third as large as the United States, but is longer from north to south. The distance from Bolivia to Tierra del Fuego is over two thousand miles, about the distance from Alaska to southern California. From the mouth of the Plata to the Andes is about as far as from New York to Chicago. South of the Plata Argentina gradually narrows to a quarter of that width.

Population. The population of Argentina is about equal to that of New York state. The natives are Spanish-



Mt. Aconcagua, Argentina.

speaking whites and half-breeds. The southern part, called Patagonia, is inhabited by Indians of great stature, who have been conquered by Argentina. Other savage Indians are found in the northern forests. About a third of the people are immigrants, mainly from Italy and Spain. There are also a number of Germans and English.

Surface. The western part of Argentina is mountainous, from the Chilean boundary along the summit of the Andes to the foothills at their eastern base. Mt. Aconcagua, the highest peak in South America, is wholly in Argentina. From the Andes to the Atlantic Ocean the country comprises the southern part of the central plain. The principal part of this plain in Argentina is covered by the pampas, which extend from the Paraguay River southward beyond the Plata River. Between them and the silvas lies the Gran Chaco (Great Hunting Ground), covered with an open forest, and inhabited by wandering tribes of Indians. South of the pampas, which have almost no stone, are the stony steppes of Patagonia.

Drainage. The principal rivers of Argentina belong to the Plata system. Plata means silver, and the river is given this name for the same reason that Argentina was named for this precious metal. The Plata River itself is the outlet of the system. It is the broadest estuary in the world, being one hundred seventy miles wide at its mouth. It extends from the junction of the Parana and Uruguay rivers to the sea. These rivers, as well as the Paraguay and the smaller tributaries, bring a great deal of mud from the Andes and the Brazilian plateau. This settles in the Plata, which is consequently shallow and obstructed by bars. Although ocean steamers ascend the Parana for a thousand miles, they would be unable to sail even as far as Buenos Aires, two hundred miles from the sea, if the government did not dredge the stream and provide other harbor improvements.

Climate. Because Argentina extends from the Torrid Zone two thousand miles southward into the South Temperate Zone, it has as great a variety of climate and productions as is found along the Atlantic coast of North America from New York to Florida. The northern part is in the same latitude as Rio de Janeiro, and produces subtropical fruits. The region of the southeast trades extends several hundred miles south of the Plata River. These winds follow the river and its tributaries into the interior, supplying moisture and equalizing the extremes of temperature. When they reach the Andes their moisture has been exhausted. In the southern part of Argentina climatic conditions are reversed, for in that section the prevailing winds are from the west. The pampero is a cold, healthy, and invigorating wind from the southwest. It alternates with warm, depressing winds from the north. The westerly winds leave most of their moisture in southern Chile. By the time they reach the interior of Patagonia they are dry. As a result there is

little rain in southern Argentina, and much of the land requires irrigation in order to produce crops. The southern ranges of the Andes, however, are broken, and south of the arid steppes there is a region of some rain. In



South America, showing areas devoted to grazing.

winter there are rains due to cyclonic winds as in the eastern United States. Hence there is sufficient pasturage in some sections to maintain great flocks of sheep.

Products and Pursuits. Stock raising is the most important industry. India and the United States alone have more cattle; only Russia and the United States have more horses. Argentina has more sheep than any other coun-



A flock of sheep on the pampas, Argentina.

try except Australia, and about as many as the United States. Horses, cattle and sheep are raised in herds numbering thousands. They do not roam at large, but are confined by fences, which often cost as much as the land itself, to immense tracts upon the ranches of the pampas. The herdsmen, called gauchos, resemble the cowboys of the United States. Horses are bred chiefly for the hides, from which leather is made. Mules, asses and oxen are exported across the Andes to the Pacific coast.

The rich soil of the northern pampas, a section resembling the prairies of the United States, is being devoted to the cultivation of wheat, of which increasing quantities are exported every year. In favorable seasons the wheat is abundant, but the country is subject to drought and to periodic invasions of locusts. These insects descend upon the country from the north, and in a short time devour the entire crop. Alfalfa is also grown. Sugar cane, oranges and other subtropical fruits are cultivated north of the wheat belt. In this section, especially among the foothills of the Andes, the vine is cultivated, and wine is made.

In Patagonia, at the foot of the eastern slope of the Andes, which are watered by the westerlies, there are forests of excellent building timber.

On the deserts of Patagonia the guanaco and rhea are

found wild. The former is similar to the llama, and is hunted for its skin. The flesh resembles venison. The rhea is the South American ostrich. It is very fleet, and is pursued on horseback and caught by means of the bola, a contrivance which consists of three stones, or metal balls, covered with leather, and attached to strong lines



Rheas.

The rhea is smaller than the ostrich of Africa. It has three toes on each foot, whereas the true ostrich has only two. It seeks the society of herds of deer and guanacos.

that are fastened together at the ends. As Darwin says: "The gaucho holds the smallest of the three in his hand and whirls the other two around his head; then, taking aim, sends them like chain-shot revolving through the air. The balls no sooner strike any object, than, winding about it, they cross each other and become firmly hitched."

The rhea differs from the African ostrich in its lack of a plumed tail. As the tail feathers furnish the beautiful ostrich plumes used in millinery, the South American bird is much less valuable. Its feathers are chiefly used in making feather dusters.

The mineral resources of Argentina have not been developed. Gold, silver, copper and iron are mined. There

is some coal, but it is of low grade, and therefore does not contribute to the growth of manufacturing.

Railways. Argentina has more miles of railway than any other country in South America. This is due partly to the level nature of the country, partly to the presence of Europeans, who are not content with the slow transportation afforded by the rivers, and partly because the great demand for cattle ranges led to the purchase of all grazing land, much of which is not reached by the rivers.



On the pampas of Argentina. The cattle ranges are inclosed by fences.

Buenos Aires (Good Air) is well named, for the climate of this section, near the southern limit of the trades, is exceptionally fine. This city is the capital of the republic. Its population is about 1,750,000, and it is not only the largest city in South America, but the largest in the Southern Hemisphere, and the largest Spanish-speaking city in the world.

Buenos Aires is a thriving city. There are many German and Italian merchants there, and the building trades are largely controlled by Italians. There is no lumber near Buenos Aires, the surrounding pampas being almost treeless. Lumber is an important import, and much of it comes from the United States. The stores and business buildings are pretentious. The cathedral and other churches are imposing, and the National Library is without a rival in South America. On account of the absence



The Trans-Andean Railroad, between Buenos Aires and Valparaiso. Argentina imports locomotives from the United States.

of lumber, stucco is much used as a covering for residences. Palermo Park rivals the Botanical Gardens of Rio de Janeiro in beauty.

Most of the commerce of the Plata region is carried on through the port of Buenos Aires. It is the terminus of the river traffic, of the local railroads, and of the Trans-Andean Railroad, the principal railway in South America, by which Buenos Aires and the cities and towns of Argentina are connected with Valparaiso, in Chile, the largest port on the Pacific coast. Many steamship lines ply between Buenos Aires and the ports of Europe. Other steamship lines connect the city with New York and other ports on the Atlantic coast of the United States, stopping en route at Brazilian and West Indian coast ports.

The chief exports are animal products. Frozen beef and mutton are shipped to England. The largest meat refrigerating establishment in the world is at Buenos Aires.



Santa Fe Street, Buenos Aires, Argentina.

Dried (jerked) beef is sent to other South American countries; canned meats and beef extract go to all parts of the world. These products are prepared in the great packing houses of Buenos Aires, which rival those of Chicago. The manufactures are chiefly connected with cattle raising, such as dairying, soapmaking and tanning. As yet such products as hides, hoofs, horns, tallow and wool are exported in the raw state.

Rosario, on the Parana River, five hundred miles from the ocean, is the second city of Argentina in size and importance. It is the shipping point for the wheat lands and for the fruit, sugar and tobacco plantations of the subtropical regions along the Paraguay and Parana rivers. Wheat is the chief export, and is loaded directly into ocean-going vessels as they lie at the wharves along the river bank. The city itself is situated upon a level plain sixty-five feet above the river. Rosario has many grain elevators and warehouses, and is an important railway center.

Commerce. About half of the imports come from Europe, especially from Great Britain, which sends more than one fourth of the total. The imports from Europe include textiles, machinery and foodstuffs. About half of Argentina's imports come from the United States, and she sends us a large part of her exports. The imports from the United States include locomotives and cars, agricultural

implements, tools, wire and other iron and steel manufactures, and kerosene.

Argentina derives its importance from the pampas, one of the finest wheat and pasture regions in the world; from the Rio de la Plata, which affords a commodious harbor, permitting the ready export of the products of the country, and from its healthful and invigorating climate, which has induced the settlement in that country of many Europeans, under whose vigorous management the country has made great progress



American agricultural machinery in Argentina.

Questions

1. How does the route from Buenos Aires to New York *via* Valparaiso and the Panama Canal compare with the route along the eastern coast of South America?
2. How does the Panama route compare with the trade routes from Buenos Aires to Europe?
3. Which part of Argentina is in the same latitude as Rio de Janeiro? In what zone is it?
4. What river is the boundary between Argentina and Brazil?

Exercises

On a physical map of South America mark the boundaries of Argentina. Locate the chief towns.

Make two lists of the products of Argentina, one showing products which are exported and another showing products consumed in the country.

Write a full account of Argentina.

CHAPTER IX

CHILE

Location. Chile lies north and south, along the narrow western slope of the Andes. From near Lake Titicaca to Tierra del Fuego, its eastern boundary follows the Andes. Its western boundary is the Pacific Ocean. The northern part adjoins Peru and is in the Torrid Zone, but the greater portion is in the South Temperate Zone.

Size. Although there are six larger countries in South America, Chile ranks third in importance by reason of the industry and energy of its people. Brazil and Argentina occupy two thirds of South America; the remaining third is divided among the other nine countries, and of these Chile is easily the first in importance.

Chile is about two thousand five hundred miles long, and it is nowhere more than two hundred miles wide. It is about twice as long as the Pacific coast of the United States and about half as wide as California.

Surface. A coastal range of hills and low mountains rises abruptly from the sea. Between this range and the mighty Andes stretches a long, narrow plain. In the rainless region of northern Chile this plain forms the Desert of Atacama. Farther south, where the rainfall is moderate, it is transformed into a veritable garden, the famous Central Valley of Chile. In the extreme south this plain has sunk below the sea level, and only the peaks of the bordering mountains remain above the surface, where they form the Chonos Archipelago and other islands.

Drainage. The rivers of Chile are few and short, being mountain torrents which carry the rain and water from

the glacial snows to the Pacific. They are, however, important, for their water is used in irrigation.

Climate. The northern part of Chile is rainless. The trade winds blowing from the east are wholly dry when they pass the summit of the Andes. But southern and central Chile are in the realm of the westerly winds. These blow from the Pacific and discharge much moisture upon the narrow plain of Chile and the Pacific slope of the Andes. They supply considerable rain to some parts of the eastern slope also, for they make their way through the broken passes of the Andes without losing all their moisture. The climate of Chile is cooled by the cold cur-



South America, showing sections devoted to mining.

rent which flows from the southern ocean northward along the coast. Altitude plays an important part here, as elsewhere, in determining climate. The Central Valley has a delightful climate, which is never very hot, and on account of the excellent drainage is exceedingly healthful.



In the nitrate fields, Chile.

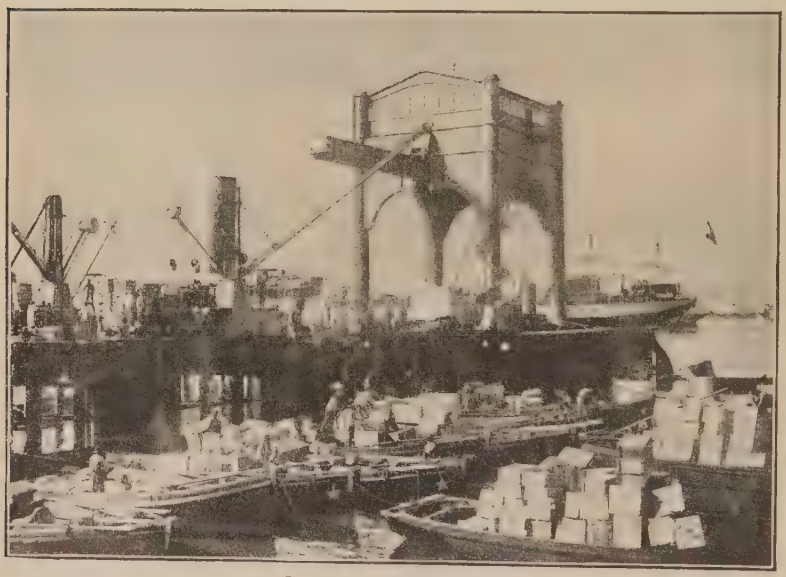
Products and Pursuits. Strange as it may seem, the rainless Desert of Atacama is the most valuable asset of Chile. Here is found nitrate of soda, the chief source of its wealth. It is probably the deposit of ancient lakes which have dried up. It has been preserved because of the absence of rain. It is hard and white, unless discolored by impurities, and is found near the surface of the ground. It is a valuable fertilizer, and is also used in making nitric acid, gunpowder and iodine. Chile imposes a tax upon every ton exported, and thus derives millions of dollars for the expenses of the government.

Copper ranks next in importance as a commercial mineral, and considerable gold, silver and coal are mined.

South of the Desert of Atacama the central plain of Chile is a prosperous agricultural region. Wheat is the chief crop. Grapes are grown, and wine is made. Apples, melons and southern fruits grow in abundance. Irrigation is frequently necessary and water for that purpose is drawn from the small rivers which cross the plain.

The southern part of Chile is heavily wooded on account of the abundant rainfall. Lumbering is an important industry. The drowned valleys, like the firths of Scotland and the fiords of Norway, afford excellent fishing grounds. In many sections the forests have been cleared and sheep are raised. This is an important industry of Tierra del Fuego, a large part of which belongs to Chile. Chile also controls both shores of the Strait of Magellan.

The chief manufacturing is the refining of the nitrate for exportation. Shoes, saddles, other leather goods and wagons are made for use within the country.



A wharf, Valparaiso, Chile.

Commerce. Railway connection has been established between Valparaiso and Buenos Aires, and the chief cities of Chile are joined by railroads.

Nitrate of soda is much the most important export. Copper, wheat and mutton are important exports. The United States controls most of the trade. Steamships ply regularly between the ports of Chile and this country,

through the Panama Canal. Steamships to Europe go both by the Panama Canal and the Strait of Magellan. Europeans purchase much nitrate for their fields of sugar beets and other crops. The chief imports of Chile are textiles, foodstuffs, kerosene and manufactures of iron and steel. Cattle and mules are brought across the Andes from Argentina.

There are many immigrants, principally from England, Germany and France.



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The Capitol of Chile, Santiago. It is one of the finest edifices in South America.

Santiago, the capital, is situated inland, upon a plateau eighteen hundred feet high. It is the largest city west of the Andes and is the fourth city of South America. It contains beautiful public buildings, devoted to the use of the government and to amusement. It has fine streets and parks, and many residences are surrounded by spacious grounds. The scenery is impressive, but the region is subject to earthquakes.

Valparaiso is the chief port and the second city of Chile. It has a fine harbor, open toward the north, and is connected by rail with Santiago and other interior towns. It is the Pacific terminus of the Trans-Andean Railroad, whose eastern terminus is Buenos Aires. The chief exports are wheat, copper and animal products. Most of the imports of Chile enter at Valparaiso.



The harbor, Valparaiso, Chile.

Iquique ranks next to Valparaiso as a port. Although it has no harbor, most of the nitrate is shipped from here on account of its nearness to the mines. The ships are loaded by means of lighters.

Concepcion is an important wheat and cattle port; it has an excellent harbor.

Magallanes is the most southern city of the world. It is on the mainland of Chile, on the Strait of Magellan. It is a port of call, where vessels passing through the strait replenish their store of coal, provisions and naval supplies. It is the distributing point from which the

sheep farms, which are numerous and extensive in this section, receive the products of more civilized countries.



Magallanes, Chile, the southernmost city in the world.

Questions

1. How many miles from north to south is the archipelago which borders the southern coast of Chile?
2. At which point of the coast of North America is there a similar archipelago?
3. Compare the climate of the Chonos Archipelago with that of the North American islands mentioned in answer to the previous question.
4. Which cities of South America are larger than Santiago?

Exercises

On a physical map of South America mark the boundaries of Chile.

Make a list of the countries which are larger than Chile.

Name the chief ports of Chile, and their exports.

Write all you know about Chile.



A herd of cattle, Chile.

CHAPTER X

URUGUAY AND PARAGUAY

URUGUAY

Location. The Oriental Republic of Uruguay lies between Brazil and Argentina, at the mouth of the Plata River. It is called Oriental because it is east of the river. It is midway between Cape St. Roque and Cape Horn, and is directly across the Atlantic Ocean from the Cape of Good Hope, the southern extremity of Africa.



A market in Montevideo, Uruguay.

Size. Although the smallest of South American countries, it is much larger than England. It has a population of over one and three quarter millions.

Surface and Drainage. Uruguay lies south of the Brazilian plateau and belongs to the central plain of South America. The surface is a gently rolling plain like that of the pampas of central Argentina, of which it is an extension. The Uruguay River, its western boundary, flows into the Plata River, which bounds it on the south. To the east is the Atlantic Ocean, and only at the north, where it touches Brazil, has Uruguay a land boundary.

Climate. The climate is pleasant, the water boundaries rendering it cooler in summer and warmer in winter than the interior of Argentina, farther west.

Products and Pursuits. The pampas of Uruguay, like those of Argentina, are natural pastures, and stock raising is the chief industry.

Agriculture, although profitable, is confined to the needs of the country. Manufacturing is wholly concerned with the preparation of the animal products. Jerked beef, which is beef dried in the sun, is exported to Brazil, but this market is being lost because Brazil is developing an extensive cattle industry on the campos and has placed a tariff upon imported meats and cattle products. Meat is frozen, extract of beef is prepared and hides are cured. More than half of the live stock are sheep and most of the remainder are cattle.

MONTEVIDEO takes its name, which means "I see the mountain," from a hill about 500 feet high on the out-



Montevideo, Uruguay. The hill on the opposite side of the harbor gives the city its name

skirts of the city. It is the capital and only large city of Uruguay. It is situated on the Plata River, two hundred miles nearer the Atlantic Ocean than is Buenos Aires.

Commerce. The United States, Great Britain and France receive the largest share of the exports of Uruguay, which consist of wool and other products of the sheep and cattle industries. Most of the imports come from the United States, Great Britain, Argentina and Brazil.

The people of Uruguay are of mixed blood and speak the Spanish language.

PARAGUAY

Location. Paraguay has no seacoast.

It is located in the center of South America, as far inland from the Atlantic coast of South America as the Mississippi Valley is from the Atlantic coast of North America. It is partly in the Torrid and partly in the South Temperate Zone.

Size. Although larger than Uruguay, it is less progressive, and has fewer people.

Surface and Drainage. Paraguay is bounded by the Parana River on the east and south, and by the Paraguay, and its tributary, the Pilcomayo, on the west. The region west of the Paraguay is the wild forest called El Gran Chaco (page 162) which is partly in northern Argentina and partly in northwestern Paraguay. East of the river the low foothills of the Brazilian plateau extend into Paraguay. Sections of this part of Paraguay are swampy.

Products. The principal crop is maté, or Paraguay tea. It is the leaf of the yerba maté, a bush or small tree, similar to holly. This plant grows wild in numerous tracts in the north and east. The leaves are gathered, dried, roasted and pulverized, and are packed in skins for

export. The powdered leaves, when steeped in boiling water, form an invigorating beverage.

Paraguay is the only country where oranges grow wild. They are so plentiful that their value is not great. They are shipped by boatloads down the Paraguay and Parana rivers to Montevideo and Buenos Aires.



Maté plant.

Tobacco is an important crop. The chief exports are maté, tobacco and oranges. Maté is sent to other South American countries, where it is a favorite beverage. Oranges are sent to Argentina and Uruguay.

Commerce. Great Britain supplies a large part of the imports, which consist of cotton fabrics, tinned provisions, agricultural machinery and tools.

Asuncion is the capital and largest city. It is connected by railroad with Buenos Aires. The Paraguay River is navigable for almost its entire length, and steamers ascend regularly to Asuncion from Buenos Aires, a distance of a thousand miles, making the voyage in five days. The commerce of Asuncion is conducted by foreigners, Germans and French, Italians and Spaniards.

Questions

1. Which is larger, Uruguay or Paraguay?
2. Which of these countries extends farther east? Which extends farther west?
3. Which is nearer the South Pole?
4. How many degrees of latitude between the southern boundary of Paraguay and the northern boundary of Uruguay?

Exercises

Draw the part of South America in which Uruguay and Paraguay are located.

Shade all of Uruguay that extends farther east than Paraguay.

Shade all of Paraguay that extends farther west than Uruguay.

Note how large portions of the two countries lie north and south of each other.

CHAPTER XI

THE NORTHERN ANDES

Location. That part of the Andean highland which lies north of Chile is in the Torrid Zone, and is divided among four countries, Colombia, Ecuador, Peru and Bolivia. All except Bolivia, which has no seacoast, border on the Pacific Ocean. Colombia, the most northern, borders also on the Caribbean Sea.



The lower course of the Magdalena River, Colombia.

Surface, Drainage and Climate. These countries resemble one another in surface and climate. Most of their territory is mountainous, and includes both the eastern and western slopes of the Andes. The climate varies with the altitude. The lowlands are tropical, the plateaus temperate, and the barren tops of the Andes, above the snow line, have an arctic climate. Thus in a climb up the mountains to a height of three miles the traveler sees many of the changes in animal and vegetable life that may be seen between the Equator and the poles.

The eastern slopes of the Andes in this section are the sources of the Orinoco, the Amazon and the Paraguay rivers. They are well watered by the moist winds from the Atlantic Ocean. These winds follow the great river valleys across South America, from the east toward the west, collecting the moisture which has evaporated from the surface of the waters over which they pass. When they encounter the cold heights of the Andes, most of their



moisture is condensed, and descends as rain or snow, feeding the numerous tributaries of these rivers and producing the most luxuriant vegetation. Most of the rain that falls in South America finds its way back to the Atlantic Ocean through these river systems. The plateaus have less moisture, much of that which falls being in the form of snow, on account of the cold; and the western slopes, as far north as Ecuador, belong to the rainless



A tropical forest in eastern Peru.

region, where nothing grows save along the short streams which flow from the fields of melting snow to the Pacific.

Productions. The minerals of this section are the chief source of wealth.

The vegetation of the lowlands includes cacao, from which cocoa and chocolate are obtained; coca, the source of cocaine, a drug; and the coconut palm, which produces coconuts. These three plants, so similar in name, are different in appearance and products. Other palms, bananas, and various tropical fruits, as well as the rubber

tree, grow in profusion with little or no cultivation. The uplands produce coffee, and in the forests is found the cinchona tree. Its bark is known as Peruvian bark, from which is obtained quinine, a valuable drug for the cure of fever. The potato grows wild in this upland region, and was sent from there to Europe by the Spanish invaders.



A train of llamas, Peru.

Animals. The common beast of burden in the Andes, especially in the southern part of this section, is the llama. It is related to the camel, but has no hump, and is very much smaller, measuring but three feet in height at the shoulders. Its feet are adapted to traveling the narrow mountain trails. Packs weighing as much as a hundred pounds are loaded upon their backs, and caravans of these sturdy little animals transport many millions of dollars worth of goods annually. The burrō, a small donkey, is used for saddle purposes in regions where travel by water, rail or stage coach is impossible, as in many journeys from the interior to the coast. Burros sometimes replace the llamas as pack animals.

The chinchilla is the principal fur-bearing animal of South America. It is found at a height of about 10,000 feet along the eastern slopes of the Andes throughout Chile, Bolivia and Peru. The chinchilla is a small rodent about the size of a squirrel. It was known to the an-

cient Incas, who valued its fur. The fur is soft and dense, gray in color, and ranks with seal, sable and ermine as one of the most expensive furs.



Condor.

The condor, which is a vulture and the largest bird that flies, lives in the Andes. It is about three feet long, and its wings extend nine feet from tip to tip. It is usually found at an elevation of ten thousand or fifteen thousand feet, and prefers to feed upon carrion, but when impelled by hunger will descend to the plains and attack sheep, goats and smaller animals.

People. Before the discovery and invasion of South America by the Spaniards the Indians of the northern Andes had attained a high degree of civilization. They erected substantial stone buildings, whose ruins remain to this day. They farmed with even more intelligence than their descendants. They mined gold and silver, and made of it articles for use and ornament. So abundant



Ruined doorway of a building erected by the Incas.

were these metals that sheets of gold were used for roofing their temples and the palaces of the Incas, as their chiefs were called. Rumors of this wealth brought the Spaniards who, under Pizarro, conquered the Indians, robbed them of their wealth, and forced them to work the mines as slaves, that the stream of gold and silver sent to Spain as treasure might not be diminished.

In the early years of the nineteenth century, under the leadership of Bolivar, one after another of these colonies revolted and became free from Spain, setting up republican governments. The Indians, however, benefited little by the change, and to this day many of them are in a condition not far removed from slavery. Much of the

land is owned by a few large proprietors, who supply the Indians with the simple necessities of life. As the Indians have little money, they are usually in debt, and the laws provide that they shall work for their creditors until the debt is paid. As a matter of fact, it is often not paid, because the Indian needs new clothing, or food, and remains in debt, laboring constantly for his master. If the latter does not need the Indian's services he may hire him to some one else and collect the pay for his work. It is not uncommon for an Indian to spend his life in such serfdom. In many sections, however, the Indians are independent, farming small patches of ground or gathering the products of the forest. There are still many savage Indians in the more remote regions.



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The tomb of Pizarro in the cathedral of Lima, Peru.

Questions

1. Is any country of the northern Andes entirely north of the Equator? Which of them are wholly south of the Equator?

2. Which are partly north and partly south? In what zone is this section?

3. Which of these countries extends farthest south? Farthest north? Farthest east? Farthest west?

4. How do these countries compare in importance with Brazil? With Argentina?

5. What advantage does their location give them?

COLOMBIA

Colombia was named in honor of the discoverer of the New World.

Location. Colombia borders upon both the Atlantic and the Pacific seaboards, and is in the Torrid Zone.

Surface, Drainage and Climate. The Andes cross the country in three ranges. There are many volcanic peaks which subject the country to earthquakes and eruptions. The valley of the Magdalena lies between the ranges of the Andes. It is very fertile and hot. Toward the north it broadens into low plains along the Caribbean Sea. The southeastern part of Colombia is included in the llanos.

Products. The principal emerald mines of the world are situated in Colombia. Gold and silver are mined in the highlands. Colombia ranks next to Russia in the



An emerald mine, Colombia.

value of the platinum mined. There are petroleum wells, and coal and iron exist, but the mines are undeveloped.

The vegetable products are of great variety, because of differences in climate, due to elevation. The tropical lowlands produce sugar cane, cacao, bananas and some cotton. The uplands produce coffee, apples, peaches, potatoes and grain. Colombia is more heavily wooded than any other country of South America, and the forests yield rubber, vegetable ivory, mahogany and Spanish cedar. The llanos are devoted to cattle raising.

Commerce. Coffee, bananas, hides, rubber and minerals are the chief exports. The chief means of transportation in the interior are the rivers and mule trains. There are



A street scene, Bogota, Colombia.

several short railways connecting Bogota and the mines with ports on the Magdalena River. The Magdalena is navigable for steamers for over five hundred miles and for small boats for two hundred miles more. The mineral and vegetable products from the interior are sent to the mouth of the Magdalena, on the Caribbean coast, and thence are shipped to Europe and the United States. The imports are chiefly manufactured articles and foodstuffs. The United States, Great Britain and Spain are the countries which chiefly trade with Colombia. The

United States buys twice as much from Colombia as that country buys from us.

People. There are many people of mixed blood, but few negroes, in Colombia. In the forests there are numerous savage Indians.

Bogota, the capital and chief city, has a population of about one hundred forty thousand. This city is situated in the very center of the country, on a broad plateau 8,700 feet above the sea, where the climate is temperate and healthful. A short mountain railway connects it with Honda, on the Magdalena. The streets are narrow, but have electric railways. Like other South American cities, it has several public squares. The houses seldom exceed two stories in height, on account of earthquakes, because a low house is less liable to fall during a shock. The people are intelligent and progressive, as is evident from the presence of a public library, theaters, telephones and newspapers. The schools are well attended, and there are good colleges.

Medellin is the principal town in the mining region. It is connected with the Magdalena River by rail.

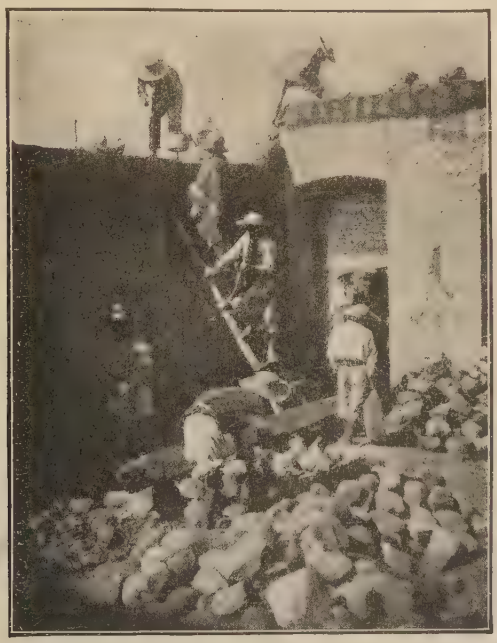
ECUADOR

Ecuador derives its name from the Equator, which crosses the northern part.

Surface. The country is chiefly a lofty and fertile plateau, averaging sixty miles in width, and surmounted by high peaks, many of which are volcanic. They extend in two rows, bordering the plateau on either side, and have been called the Avenue of Volcanoes. Chimborazo, an extinct volcano, is the highest peak. "Nowhere on the face of the earth is there such a grand assemblage of mountains. Twenty-two summits are covered with perpetual snow, and fifty are over ten thousand feet high."

This region is the volcanic center of South America.

Cotopaxi is the highest active volcano in the world. Earthquakes are violent and destructive. The houses are adapted to withstand severe shocks. On the hot tropical coast they are framed of bamboo, plastered with mud and thatched with palms. In the larger cities, such as Guayaquil and Quito, the houses of the upper class are more substantial, but seldom exceed two stories in height.



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Building a house, Ecuador.

Drainage. The principal river that crosses the coastal plain is the Guayas, which flows into the Gulf of Guayaquil. It is navigable for small steamers to the base of the Andes. On the eastern side of the Andes much of Ecuador is in the basin of the Napo River, which is a tributary of the Amazon, and is navigable to a point about one hundred miles from Quito, affording a continuous water route to the distant Atlantic.

Climate. From Ecuador, north, the Pacific coast plain changes its character. To the south it is an arid desert, because the Andes cause the southeast trade winds to lose their moisture before they reach the coastal plain. But at Ecuador the Andes turn squarely to the northeast and extend parallel to the northeast trades. Hence, these winds blow along the Pacific coastal plain, which they water as heavily as any other part of the grand division.

In Ecuador the equatorial rains fall daily, shortly after noon. In the rainy season much of the low country is flooded, and it is customary to build the houses on piles.



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Drying cacao, Ecuador.

Products. The chief article of cultivation and commerce is cacao. More than half of the commerce of Ecuador consists of this product. No other country supplies so much cacao as Ecuador.

Gold and silver are mined, but not extensively. Sulphur is obtained from the volcanoes.



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Gathering pods on a cacao plantation, Ecuador.

The manufactured exports consist chiefly of fine straw hats, called Panama hats, made for the most part in the huts of the peasants. There are hardly any railways.

People. The people are, for the most part, civilized



The waterfront, Guayaquil, Ecuador.

Indians, the descendants of those ruled by the Incas. About one tenth of the population are whites.

Guayaquil is the chief port and largest city. Its population is ninety thousand. It is situated upon the Guayas River, about one hundred miles from the sea. About half of the commerce passes through this port. The city is built on low, flat land, and is hot and unhealthful; epidemics of yellow fever are frequent. It has the best harbor on the Pacific coast of South America. Although it is the most western city in South America, it is almost directly south of Charleston, South Carolina.

Quito is situated on the plateau, 9,250 feet above the sea. It is one of the most elevated capitals in the world, and is probably the oldest city in the Western Hemisphere, having been an important Indian city long before the time of Columbus. Although it is but a few miles from the Equator, the great height gives it a healthful and even climate. There is a railroad from Quito to Duran, near Guayaquil. Most of the inhabitants

have small means; yet Quito has considerable culture, having a university, a public library, an observatory, hospitals, and other institutions. As in the other plateau cities of South America, the streets are steep and narrow, and vehicles are not used.



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Street in Quito, Ecuador.

PERU

Peru is important for its valuable mineral and agricultural exports, and interesting because of its history.

Surface. The surface is divided into three sections: the narrow coast plains west of the Andes; the high plateau, which comprises most of the country, and is several hundred miles wide; and the eastern slope of the Andes, descending to the central plain of South America.

Climate and Products. The abundant rains which water the eastern slope of the Andes drain into the head waters of the Amazon. The mountains are thickly wooded, and produce much Peruvian bark, which is shipped down the Amazon or packed by llamas and mules to the plateau,



South America, showing areas devoted to the production of cacao.

whence it is sent by rail to the coast. This section is sparsely settled, but in the valleys Indians cultivate coca, tobacco and coffee in primitive fashion.

What moisture falls upon the plateau descends in winter, mainly as snow, which, as it melts, supplies the mountain streams and makes possible the cultivation of wheat for export. Other grains, such as maize and barley, are grown upon the lower levels of the plateau. The potato is a native of Peru, from whence it was sent to Europe after the Spanish conquest. It is still largely grown, but does not thrive as in the warmer fields and with the better methods of Europe and North America.

Alpacas are raised for their wool, which is exported, to be woven into fine cloth.

Mining is the chief industry in the mountains. The silver mines at Cerro de Pasco are very valuable. A mountain railway approaches within a few miles of these mines, but has not been completed on account of the difficult nature of the country. It is the highest railway in the world. It passes through Lima, the capital, and termi-



The valley of the Rimac River, Peru.

nates at Callao, the chief port. Llamas are used for the transportation of ore in places not reached by the railroad. The copper mined is even more valuable than the silver, and so also is the petroleum produced.

The eastern slopes of the mountains and the plateau receive most of the rainfall. When the winds pass over the coast plains they are so dry that many sections go for years without rain. Hence this region belongs to the Great South American Desert, which extends for two thousand miles along the Pacific coast, from Chile to

Ecuador. The soil is rich and fertile, like that of the broader rainless region in North America, and, like it, needs only water to produce the richest crops. Irrigation is practiced, the water being brought by ditches from the streams of snow water which pierce the desert at places. Thus the plantations become very productive. Sugar and cotton wool, a different plant from the cotton of the United States, are exported.

More than a third of the trade of Peru is controlled by Great Britain.



Loading a caravan of llamas.

People. The native Indians, who inhabited Peru at the time of its conquest by Pizarro, in 1534, were highly civilized. They mined gold and silver, and had much skill in working these metals. The descendants of these Indians form about half of the present population of Peru. Most of them are farmers and herdsmen who live in serf-



Plaza in Lima, the capital of Peru.

dom to the landowners. The latter supply the Indians with a plot on which to build a hut, and furnish them with material for clothing and food. For such meager supplies the peasants spend their lives in labor without earning enough to pay the unending debt. The rest of the people are of Spanish origin, or have settled in Peru from Europe and the United States.

Cities. There are no cities among the forests of the eastern slope. On the plateau there are scattered villages.



On the Oroya Railway, Peru.

Arequipa is situated about seventy-five hundred feet above the sea, upon a plateau, which is watered by irrigation. The city is one of the most beautiful in South America, and has a large trade. It is connected with the higher parts of the plateau region and with the coast by railroad. Favored by clear air, Harvard University has an astronomical observatory here, to observe stars which can not be seen in the northern hemisphere.

Cuzco has an elevation of eleven thousand feet. The

city is well built and has many stone houses. It is on the railway which extends to Puno and to Arequipa. Cuzco was the ancient capital of the Incas, and the ruins of their temples and palaces, which are examples of the highest skill in stone cutting and stone fitting, may still be seen.

Puno, the port of Peru on Lake Titicaca, is connected by steamers with Bolivia.



The railway station, Callao, Peru.

Callao is the chief port of Peru. The harbor is merely an open roadstead. It is connected by rail with Lima, which is only six miles distant.

Lima, the capital and largest city, is a city of educated and cultured people, having a costly hospital, a valuable library and many public parks and squares orna-



The Plaza and the cathedral, Lima, Peru.

mented by fountains and statues. The most noted statue in the city is a bronze statue of Bolivar. There are many convents and churches. The cathedral is an imposing building, constructed, like many of the houses of the better class, of adobe or sun-dried brick.



Statue of Simon Bolivar, "Liberator," before the senate building, Lima, Peru.

BOLIVIA

Bolivia is named in honor of General Bolivar, one of the greatest South Americans, who freed the northwestern countries from Spain.

Surface. The surface of Bolivia consists of two parts, the eastern region and the plateau. The eastern region comprises the eastern slope of the Andes, which is covered with luxuriant forests, varying in character according to the altitude. At the foot of the Andes, Bolivia, like Colombia, extends farther into the central plain than either Peru or Ecuador. The northeastern part of the



Mt. Illimani, Bolivia.

country, on the eastern slope of the Andes, belongs to the silvas. The southeastern part approaches the pampas, and consists largely of pasture land.

The plateau of Bolivia is the highest plateau in the Western Hemisphere, its height being thirteen thousand feet. Sorata and Illimani are the highest peaks. The lower valleys of this tableland are very productive, and include the chief agricultural region for plants of a temperate climate. Coca is abundantly grown.

Bolivia has no seacoast. The coastal plain west of the Bolivian plateau belongs to Chile. Hence Bolivia has no desert region like that of Peru and Ecuador.

Drainage. The eastern slope of the Bolivian Andes is in two drainage basins. The northern part is drained by tributaries of the Amazon, and the southeastern region touches the headwaters of the Paraguay.

Lake Titicaca has very irregular shores, and it contains several islands; in some places it is very deep. The water is supplied by streams from the fields of melt-

ing snow, and is kept from overflowing by evaporation, because the lake has no true outlet. It drains through a deep and narrow river, one hundred ninety miles long, into a smaller lake, or rather swamp, where the outflow ceases. Along the shore rushes abound. The ancient Indians made raft-like boats of them, and such boats are still in use by the natives. Along the shore and on the islands are many ruins of the Incan civilization.



On the road between Lake Titicaca and La Paz, Bolivia. The coach is called a tilbury.

Products. The wealth of Bolivia is in its mines. It is probably the richest mineral region in South America. The deposits include silver, copper, tin, lead, zinc and gold. Bolivia produces about one fourth of the world's tin supply, ranking second to the Malay Peninsula.

The alpaca, which resembles the llama but is smaller, is one of the chief domestic animals, and its wool, which is used for dress goods, is an important export. The guanaco, or wild llama, abounds in this country.

Among the foothills of the southeastern part of Bolivia are vast pastures, where cattle are extensively herded.

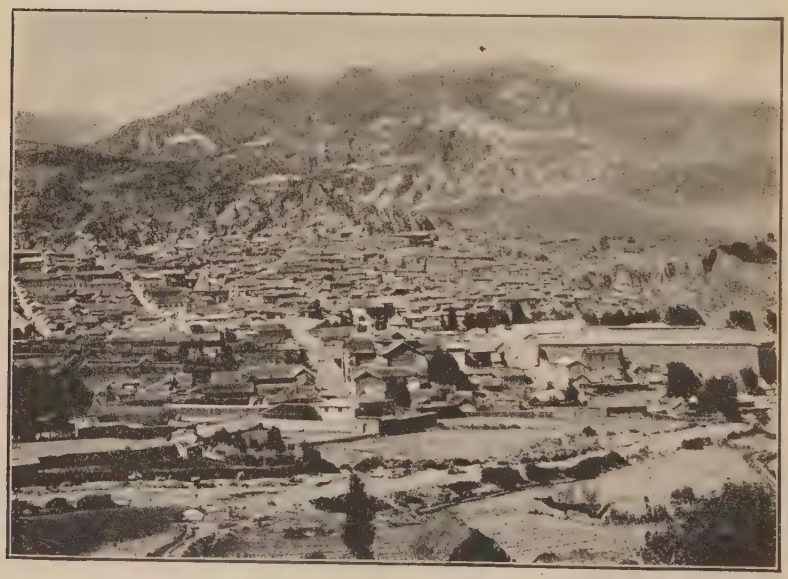
Rubber is extensively produced, Bolivia ranking next to Brazil in rubber production.

Commerce. Minerals, especially tin, are the chief exports. Most of the tin is sent to Great Britain. Manufactures and foods are the principal imports; most of them come from Great Britain and the United States.

There are several routes by which the products are shipped abroad through the neighboring countries. The navigable rivers of Bolivia and Brazil furnish transportation to the Atlantic, the distance to Para being twenty-five hundred miles. Products are also sent by rail across Chile to the port of Antofagasta. Much of the ore and refined metal is sent by llama caravan to La Paz; thence it goes by small steamers across Lake Titicaca to Puno, in Peru, and thence by rail through Arequipa to Mollendo.

People. Three fourths of the population are Indians, who speak their own language. In the towns the people are chiefly Spanish and half-breeds.

La Paz, the capital and principal city, has a population of about one hundred thousand. Its elevation is



La Paz, Bolivia.

12,250 feet. The streets are steep and narrow, and vehicles are unknown. Goods are transported by porters, llamas and mules. The houses are unpretentious buildings of brick, with tile roofs. The region is volcanic.



Plaza at La Paz, Bolivia.

Illimani and Sorata are visible from the city, and the scenery is of true mountain grandeur.

COCHABAMBA is a commercial center. SUCRE is surrounded by fertile valleys.

POTOSI is the site of valuable silver mines. They were operated by the Incas, and the city then had a population of one hundred fifty thousand. It is now much smaller, but the mines still yield great wealth.

Questions

1. Is any country of the northern Andean section not engaged in mining?
2. Which is the principal mining country of this region? How does it rank in this respect among all the countries of South America?
3. In which parts of Ecuador is cacao chiefly grown? In which parts of Brazil?
4. Where are the principal silver mines of Bolivia? Of Peru?

Exercises

On an outline map of South America locate the Andean countries.

Write a complete account of each country.

CHAPTER XII

VENEZUELA AND THE GUIANAS

Venezuela was discovered by Columbus in 1498. Of the countries in South America north of the Equator, Venezuela, owing to its altitude, is the most progressive.

Location. It extends along the Caribbean Sea from Lake Maracaibo to the delta of the Orinoco. It is in the Torrid Zone, and is the only republic in South America which lies wholly north of the Equator. Venezuela is about a third as large as Argentina.

Surface. The highlands are in the south and the northwest. The former belong to the western part of the plateau of Guiana, the latter are the most eastern spur of the Andes. Mt. Icutu, the highest point yet discovered east of the Andes, is on the plateau of Guiana, in Venezuela. Between these highlands flows the Orinoco, along whose banks spread the extensive llanos stretching northward to the Caribbean Sea. The high and the low llanos are the northern part of the great South American plain, and comprise about half of Venezuela.

Drainage. The Orinoco River flows northward, between the Andes and the plateau of Guiana, and then eastward across Venezuela. It is a broad stream with a slow current due to the gradual incline of its valley. It brings from the highlands a great quantity of mud, which is deposited at its mouth, forming low, swampy islands, which divide the mouth of the Orinoco into half a hundred branching streams and are called a delta. The Orinoco is navigable to the Andes.

Lake Maracaibo is a shallow coastal lagoon, surrounded by lowlands, and inclosed by the northern extremities of the Andes. Indian villages upon its banks are built upon piles, and they so impressed the early Spanish explorers that they called the country Venezuela, "Little Venice."



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Indian houses at Lake Maracaibo. From such huts as these Venezuela derived its name.

Climate. The climate ranges from the Arctic temperature of the snowy regions of the Andes to the hottest in South America, in the lowlands. The highlands and interior have, however, a dry and, on the whole, healthful climate, but the low moist coast lands are subject to yellow fever. Venezuela has two seasons. From June to August is the rainy season, when the belt of equatorial calms extends over the country. During the dry season from December to February, the belt of calms, with its daily rains, lies south of the Equator; then the high llanos of Venezuela become so dry that great clouds of dust are blown about by the northeast trades, which then penetrate to the interior, finding an easy approach by way of the Orinoco Valley.

Products. The chief products of Venezuela are found upon the great grazing lands, the llanos, where millions of cattle range. In the highlands much coffee is grown, as well as considerable cacao, tobacco, coconuts and bananas. The forests of the south yield rubber and divi-divi, the pods of which furnish material for tanning hides. The tonka bean is the seed of a tall tree which



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Caracas, Venezuela.

grows in Venezuela. The wood of the tree, and especially the seeds, are fragrant; the latter are used in the manufacture of perfumes. There are valuable petroleum wells and lakes of asphalt, and rich deposits of minerals, especially of gold. The exports are coffee, cacao, petroleum, asphalt, hides, and live cattle.

People. The people are principally of Spanish descent, and the Spanish language is chiefly spoken, even by the Indians. The herdsmen of the llanos, who are called *llaneros,* live in rude houses and have the bare necessities of life. Colonists from Europe and the United States

have settled here in large numbers. Most of the people live on the northwestern coast.

Cities. Caracas, the capital and most populous town, is located upon a plateau about five miles from the Caribbean coast. The climate is healthful. The houses are low, because this is a region of earthquakes. They have brightly painted walls and red tile roofs, and are often built around three sides of a central court, or *patio,* like the houses of Central America.



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La Guaira, Venezuela.

La Guaira is the port of Caracas. It is connected with the capital by a mountain railroad, which winds so much in ascending the plateau that it is more than twenty miles long, although the direct distance is only five miles. La Guaira gives its name to a brand of coffee.

Maracaibo is another port whose name is applied to a brand of coffee, much of which is sold as Java coffee.

Ciudad Bolivar is the chief city on the Orinoco River.

Government. Unlike the people of most South American countries, the Venezuelans have not been content to yield the control of the business of the country to settlers from abroad. In consequence of this, combined with disturbances in the government, this country has been at odds with the United States and several European nations. The Monroe Doctrine has helped to protect Venezuela from European aggression.



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On the railroad between La Guaira and Caracas, Venezuela.

The location of Caracas, away from the seacoast and in the mountains, for climatic reasons, also prevents its bombardment by the navies of foreign powers in case of war. In this respect it is like the capitals of several other Andean countries, resembling in location the citadels upon the plateaus of central Spain, from which the original settlers came. But with the development of the foreign trade of the country, which makes its imports and exports subject to blockade and attack, and the

facilities afforded by the Orinoco for the invasion of the extensive interior, the fortified position of its capital has become of little importance.

Venezuela is nearer to the United States than to Europe, and the largest share of the commerce is with this country. There are several steamship lines which carry freight and passengers between New York and Venezuelan ports, the voyage requiring about a week.

THE COLONIES OF GUIANA

Besides the ten republics of South America there are three small colonies belonging respectively to the British Empire, to Holland and to France. They are located upon the plateau of Guiana.

British Guiana is the largest of the three colonies, being about the size of Great Britain. There is a low coastal plain, which was partly reclaimed from the sea by the early Dutch settlers, who thus practiced in South America the lesson learned in the mother country. Many rivers, chief among them the Essequibo, carry mud from the plateau out to sea. They are navigable for but a short distance, being interrupted by rapids at the point where they leave the plateau.

The country back of the coast is covered with a jungle of tropical vegetation. Jaguars dwell there, and alligators make the rivers unsafe. The guinea pig, which is eaten in many parts of South America, is a native of this section. The principal product and export is sugar, made from sugar cane. Rice is also an important export. Some gold is obtained, and diamonds are mined. Most of the trade is with Great Britain, Canada and the United States. There are more whites than in the other two colonies. They are chiefly Portuguese and British, but are outnumbered by the negroes and Hindus, who form the bulk of the population.

Georgetown is the capital and the residence of the governor, who represents the British Crown. It is below sea level and is drained by canals.

Dutch Guiana belongs to Holland. In surface, climate and products it resembles British Guiana. It originally belonged to England, but was transferred to the Dutch in 1667, in exchange for New York.

Paramaribo, the residence of the Dutch governor, is the capital. There are no railways and no good roads. The colony furnishes no income to Holland, but is a source of expense.

French Guiana belongs to France. Its coast, unlike that of the more western colonies, is above sea level. It is administered by a governor, who resides at Cayenne.

France maintains a penal establishment in this colony, to which convicted criminals, as was Dreyfus, are banished. The climate is not healthful, and proves fatal to many of these prisoners.

Questions

1. At which part of Venezuela is the Orinoco River a boundary?
2. What country does this river separate from Venezuela?
3. What is the character of the surface on the left bank of the Orinoco in this section? On the right bank?

Exercises

Name the colonies of Guiana in order from west to east. Name them in order of size beginning with the largest. Compare the two lists.

On a physical map of South America draw the boundaries of Venezuela and the Guianas.

Write a full description of these countries.

SUMMARY AND COMPARISON

South America was sighted by Columbus in 1498 on his third voyage to the New World, and the exploration, conquest and settlement of North and South America began at about the same time. Yet North America has outstripped South America in civilization and progress, and is the more important of the two grand divisions of the Western Hemisphere.

This is largely on account of its natural advantages. North America is located in the Northern Hemisphere, where the land is massed around the north pole, thus bringing it close to the inhabited parts of the Old World. South America, on the contrary, is separated from the other grand divisions of the Southern Hemisphere by broad oceans.

Both grand divisions are shaped like triangles. The broad part of each is in the north and the narrow part in the south. Consequently the wide part of North America is in the North Temperate Zone and the narrow part in the Torrid Zone. But in South America the broad part is in the Torrid Zone and only the narrow part is in the South Temperate Zone. North America has therefore much land in the region whose climate resembles that of England, France, Germany and the Netherlands. These nations have attained leadership in Europe, and have colonized the temperate parts of the world with energetic and industrious people. South America has most of its territory in the hottest zone of the earth. Here labor is carried on with reluctance and difficulty, and usually interrupted by a *siesta* or nap during the middle of the day.

Both grand divisions have superb natural water ways which give admission to the interior. North America has the additional advantage of numerous broad lakes,

which aid domestic commerce. It has also broader plains and more open forests, instead of the impenetrable tropical jungle which has delayed the settlement of the interior of the broadest part of South America. The coast of North America is not only actually longer than that of South America, but is longer in proportion to its area. The numerous harbors have made intercourse with other grand divisions safe, commerce has been encouraged, and the demand for North American products has constantly increased. In South America there are a few good harbors, but in many cases an open roadstead is the only anchorage for large vessels.

Exercise

Describe a coasting voyage from Montreal to Vancouver, by way of the Strait of Magellan.

State the waters through which you would sail; the ports at which you would call; the cargoes shipped to and from each port; the language spoken there; some interesting sight to be seen at each; the distance between ports, and the time consumed on the voyage, supposing that the vessel travels two hundred miles a day.

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INDEX AND PRONOUNCING VOCABULARY

KEY. — VOWELS: **ā** in **lāte**, **ă** in **făt**, **â** in **câre**, **ä** in **färr**, **å** in **låst**, **ą** in **fąll**, **ą́** in **sofą́**, **au** in **author**; **ē** in **mē**, **ĕ** in **mĕt**, **bĕrry**, **ę** in **veil**, **ę̆** in **tęrm**; **ī** in **fīne**, **ĭ** in **fĭn**, **ĭ** in **polĭce**; **ō** in **nōte**, **ŏ** in **nŏt**, **ȯ** in **sȯn**, **ô** in **fôr**, **ǫ** in **dǫ**, **ǫ̆** in **wǫlf**; **ū** in **tūne**, **ŭ** in **nŭt**, **u̇** in **rude** (= **ʉ**), **u̇̆** in **fu̇ll**, **ua** = **wa**, **ue** = **we**; **ȳ** in **mȳ**, **y̆** in **hy̆mn**. CONSONANTS: **ç** in **çent**, **maçhine**, **c** in **can**; **ġ** in **ġem**, **g̈** in **g̈et**; **n̈** = **ng**, **ñ** like **ny** in **barnyard**, **N** = **ng** in its effect (nasal) on the preceding vowel, but is itself silent; **s̱** = **z**; **tḧ** in **tḧine**. *Italic letters are silent.*

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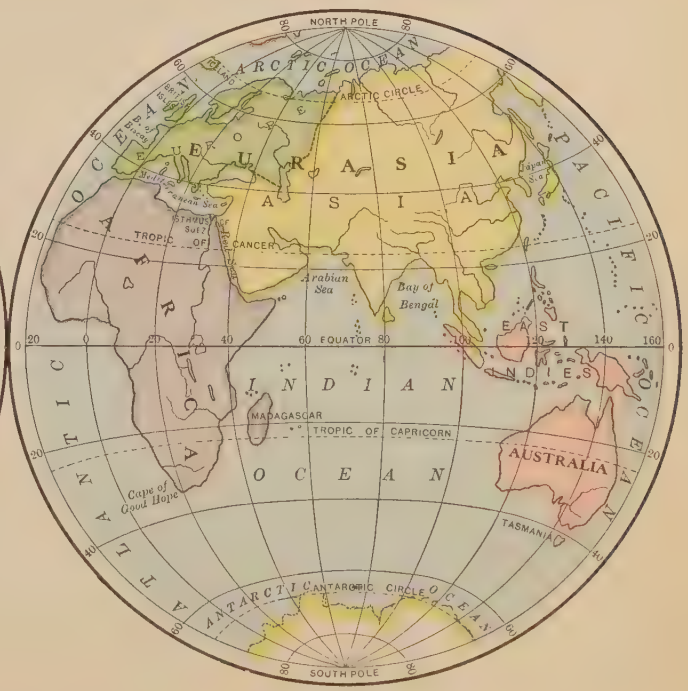
APPENDIX

REFERENCE MAPS AND TABLES

WESTERN HEMISPHERE



EASTERN HEMISPHERE



Area and Population of Grand Divisions and Countries

SUMMARY

Length of earth's axis (miles)	7,900
Length of equator (miles)	24,900
Earth's Surface (sq. mi.)	**196,950,000**
Pacific Ocean (sq. mi.)	67,800,000
Atlantic Ocean (sq. mi.)	34,500,000
Indian Ocean (sq. mi.)	28,600,000
Arctic Ocean (sq. mi.)	5,540,000
Antarctic Ocean (sq. mi.)	3,000,000
The Sea (sq. mi.)	**139,440,000**

Grand Divisions

	Square Miles	Population
North America	9,439,000	145,617,000
South America	7,048,000	77,226,000
Europe	3,861,000	469,536,000
Asia	17,089,000	913,810,000
Africa	11,612,000	135,549,000
Australia, etc.	3,461,000	8,590,000
Antarctic Cont.	5,000,000	.....
The Land	**57,510,000**	**1,750,328,000**

NORTH AMERICA

	Square Miles	Population
United States (States in Table, page xv)	3,088,519	105,711,000
Alaska	590,884	55,000
Dom. of Canada	3,684,700	8,788,000
Nova Scotia	21,400	524,000
N. Brunswick	28,000	388,000
Prince Edw. I.	2,200	89,000
Quebec	594,400	2,361,000
Ontario	407,300	2,934,000
Manitoba	251,800	610,000
Saskatchewan	251,700	757,000
Alberta	255,300	588,000
Brit. Columbia	355,900	525,000
Yukon Territory	207,000	4,000
Northwest Territories	1,309,700	8,000
Newf'dland, etc.	162,100	266,000
St. Pierre, etc.	93	4,000
Greenland	838,000	14,000
Mexico	767,200	14,335,000
Central America	216,100	6,056,000
Guatemala	42,400	2,005,000
Brit. Honduras	8,600	45,000
Honduras	44,273	773,000
Salvador	13,200	1,657,000
Nicaragua	51,700	638,000
Costa Rica	23,000	472,000
Panama	32,400	443,000
Canal Zone	527	23,000
West Indies	91,200	10,368,000
Cuba	44,165	3,569,000
Haiti, Rep. of	10,200	2,300,000
Dominican Rep.	19,300	897,000
Jamaica, etc.	4,700	869,000
Porto Rico	3,435	1,300,000
Bahama Is.	4,400	53,000
Lesser Antilles, etc.	5,000	1,380,000
Bermuda Is.	19	20,000

SOUTH AMERICA

	Square Miles	Population
Brazil	3,285,300	39,870,000
Argentina	1,153,200	10,600,000
Paraguay	122,000	799,000
Uruguay	72,000	1,762,000
Chile	290,000	4,025,000
Bolivia	454,000	2,890,000
Peru	532,000	5,550,000
Ecuador	118,000	1,563,000
Colombia	441,000	6,618,000
Venezuela	394,000	3,027,000
Guiana, British	89,500	298,000
Guiana, Dutch	54,300	143,000
Guiana, French	34,700	47,000
Falkland Is., etc.	8,000	4,000

EUROPE

United Kingdom	94,300	44,176,000
England	50,900	35,681,000
Wales	7,500	2,206,000
Scotland	30,400	4,882,500
N. Ireland, etc.	5,600	1,406,500
Irish Free State	26,600	2,973,000
Germany	181,000	62,411,000
Belgium	11,800	7,875,000
Netherlands	12,950	7,525,000
Denmark, etc.	17,140	3,458,000
Iceland	39,700	95,000
Norway, etc.	164,000	2,651,500
Sweden	173,000	5,904,500
Poland	150,000	29,589,000
Danzig	754	384,000
Lithuania	21,000	2,716,000
Latvia	25,500	1,845,000
Estonia	18,400	1,117,000
Monaco	8	22,000
Luxemburg	1,000	261,000
Sarre Basin	738	770,000
Andorra	191	5,000
France	212,700	40,922,000
Spain	192,000	20,839,000
Gibraltar	2	21,000
Portugal, etc.	35,172	5,854,000
Switzerland	15,950	3,880,000
Italy	119,700	38,755,500
City of the Vatican	¼ sq. mi.	500
San Marino	38	13,000
Malta	122	225,000
Liechtenstein	65	11,000
Austria	32,400	6,536,000
Hungary	35,900	7,987,000
Czechoslovakia	54,200	13,613,000
Yugoslavia	96,000	12,017,000
Rumania	122,300	17,393,000
Bulgaria	40,000	5,483,000
Albania	17,400	832,000
Greece	50,000	6,195,000
Turkey in Europe	9,300	1,044,000
Union of Socialist Soviet Republics —		
Russia in Europe	1,740,000	110,579,000
R. S. F. S. R.	1,517,000	76,575,000
Ukraine	174,400	29,020,000
White Russia	48,600	4,984,000
Finland	149,700	3,558,000



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Area and Population of Grand Divisions and Countries (*continued*)

ASIA

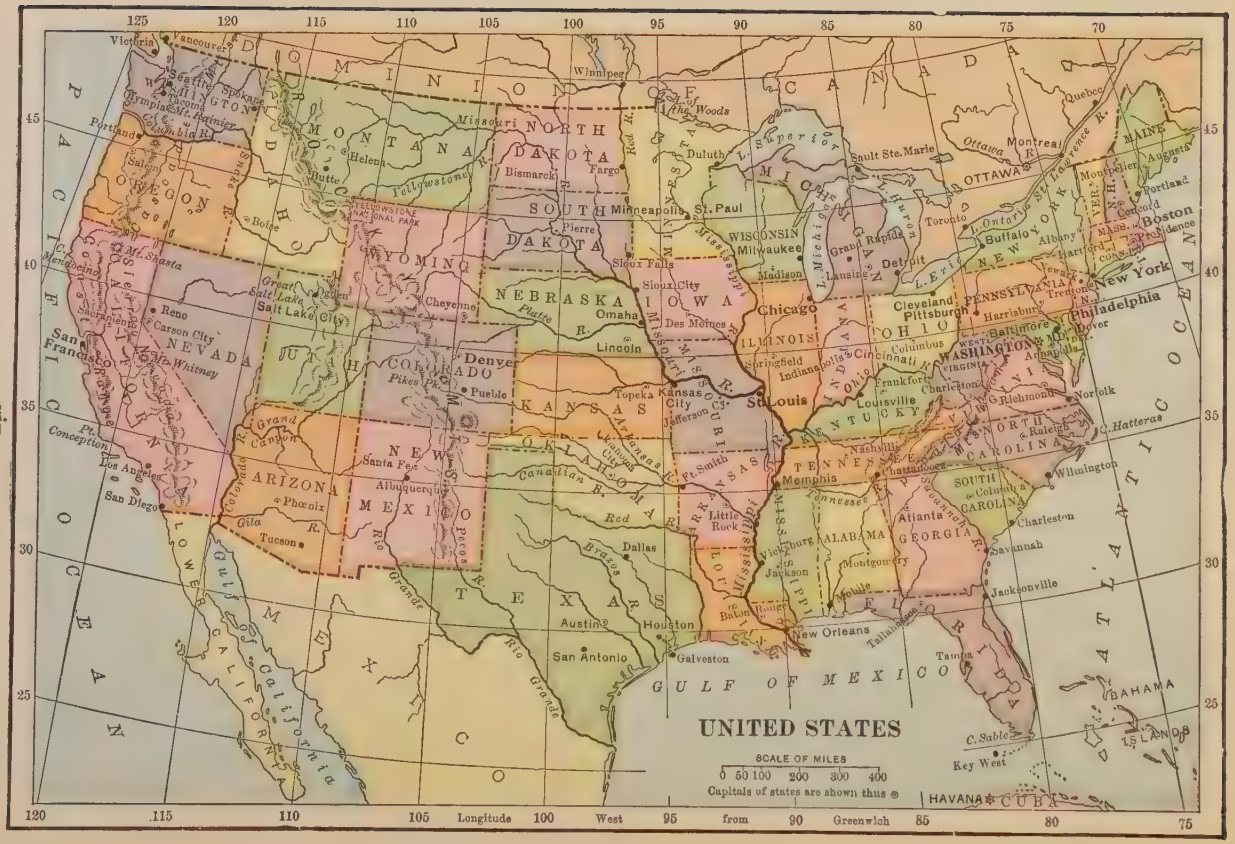
	Square Miles	Population
Turkey in Asia.	290,000	13,000,000
Rhodes, etc. (Italy)	1,000	115,000
Syria	60,000	2,046,000
Iraq	143,250	2,850,000
Palestine	9,000	757,000
Cyprus	3,580	311,000
Sinai (Egypt)	22,780	15,000
Trans-Jordan	25,000	260,000
Aden, etc.	9,000	55,000
Oman	82,000	500,000
Other Arabia	1,100,000	7,000,000
Persia	628,000	10,000,000
Afghanistan	270,000	8,000,000
Portuguese India	1,600	549,000
Indian Empire	1,806,000	318,943,000
India Proper	1,437,000	304,931,000
Burma	234,000	13,212,000
Baluchistan	135,000	800,000
Nepal	54,000	5,600,000
Bhutan	20,000	250,000
Ceylon, etc.	25,500	4,575,000
Straits Settl's, etc.	52,000	3,332,000
Siam	200,150	9,207,000
Fr. Indo-China, etc.	274,400	20,982,000
East Indies	772,000	62,696,000
Philippine Is. (U. S.)	115,000	10,351,000
Java (Neth.)	50,700	36,404,000
Sumatra, etc. (Neth.)	182,000	6,219,000
Borneo (Neth.)	207,000	1,758,000
Other Islands (Neth.)	134,000	6,633,000
Borneo, etc. (Brit.)	76,000	889,000
Timor, part of (Port.)	7,300	442,000
China, etc.	4,279,000	320,653,000
China proper	1,534,500	302,113,000
Tibet	463,000	2,000,000
Sinkiang	550,300	2,000,000
Mongolia	1,367,600	1,800,000
Manchuria	363,600	12,740,000
Hong Kong	388	891,000
Weihaiwei	285	155,000
Macao	4	84,000
Japanese Empire	261,500	84,549,000
Japan proper	147,200	59,737,000
Chosen	85,200	19,523,000
Formosa (Taiwan), etc.	13,900	3,995,000
Karafuto (S. Sakhalin)	13,900	204,000
Kwantung	1,300	1,090,000
Union of Socialist Soviet Republics —		
Russia in Asia	6,669,000	36,435,000
Russian Socialist Federal Soviet Republic	6,112,000	24,283,000
Transcaucasia	71,000	5,851,000
Turkoman Republic	189,500	1,031,000
Uzbek Republic	131,500	5,270,000
Lake Aral and Caspian Sea	195,000	.....

AFRICA

	Square Miles	Population
Egypt	360,000	14,169,000
Libia	580,000	766,000
Tunis	48,300	2,160,000
Algeria	847,000	6,065,000
Morocco (French)	223,000	4,229,000
Morocco (Spanish)	8,775	620,000
Tangier Zone (Int.)	225	80,000
Rio de Oro, etc.	120,000	164,000
French West Africa, etc.	1,822,000	14,304,000
Gambia	4,100	210,000
Portuguese Guinea	14,000	289,000
Sierra Leone	31,000	1,541,000
Liberia	43,000	2,500,000
Gold Coast, etc.	93,000	2,266,000
Nigeria, etc.	367,000	19,426,000
Anglo-Eg. Sudan	1,014,400	7,006,000
Abyssinia (Ethiopia)	350,000	10,000,000
Eritrea	46,000	403,000
French Somali Coast	5,800	208,000
British Somaliland	68,000	345,000
Italian Somaliland	187,000	900,000
Uganda	110,300	3,137,000
Kenya	212,000	2,737,000
Zanzibar	1,000	217,000
Tanganyika Ter. Br. Mandate	374,000	4,140,000
Belgian Congo, etc.	918,000	8,518,000
Fr. Equatorial Africa, etc.	976,000	3,128,000
Cameroon, Fr. Man.	167,000	1,879,000
Angola, etc.	485,000	4,178,000
Mozambique	428,100	3,657,000
Union of S. Af.	794,300	7,342,000
C. of Gd. Hope	276,500	2,836,000
Natal	35,300	1,451,000
Or. Free State	49,600	643,000
Transvaal	110,500	2,153,000
S. W. Africa Br. Man.	322,400	259,000
Rhodesia	437,000	2,022,000
Other Brit. S. Af.	331,300	2,058,000
Madagascar	242,000	3,621,000
Other Islands	8,700	1,264,000

AUSTRALIA, ETC.

Com. of Austr.	2,974,600	5,436,000
New S. Wales	309,450	2,100,000
Victoria	87,900	1,531,000
Queensland	670,500	756,000
South Austr.	380,100	495,000
Western Austr.	975,900	333,000
Tasmania	26,200	214,000
Northern Ter.	523,600	4,000
Fed. Capital Ter.	950	3,000
New Zealand	103,570	1,344,000
New Guinea, etc.	333,840	830,000
Solomon Islands	14,800	207,000
New Caledonia	8,550	52,000
New Hebrides	5,700	60,000
Fiji	7,080	172,000
Samoa Islands	1,327	46,000
Hawaiian Is.	6,449	256,000
Other Pacific Is.	5,384	187,000


UNITED STATES
SCALE OF MILES
0 50 100 200 300 400
Capitals of states are shown thus ⊛
Longitude West from Greenwich
DOMINION OF CANADA
PACIFIC OCEAN
ATLANTIC OCEAN
GULF OF MEXICO
Victoria
Vancouver
Winnipeg
Quebec
Montreal
Ottawa
Toronto
Portland
Seattle
Spokane
Tacoma
Olympia
Mt. Rainier
Columbia R.
Salem
OREGON
Boise
Helena
Butte
Missouri R.
Yellowstone R.
YELLOWSTONE NATIONAL PARK
MONTANA
NORTH DAKOTA
Bismarck
Fargo
Red R.
Lake of the Woods
Duluth
Lake Superior
Sault Ste. Marie
MICHIGAN
Lake Michigan
Grand Rapids
Detroit
Lansing
Lake Erie
Lake Ontario
OTTAWA R.
St. Lawrence R.
MAINE
Augusta
Portland
Montpelier
VERMONT
NEW HAMPSHIRE
Concord
Boston
MASS.
Providence
Albany
Hartford
Conn. R.
NEW YORK
New York
Mt. Shasta
Sacramento
San Francisco
Pt. Reyes
Pt. Conception
Los Angeles
San Diego
Reno
Carson City
NEVADA
Great Salt Lake
Salt Lake City
Mt. Whitney
Cheyenne
WYOMING
Pikes Pk.
Denver
COLORADO
Pueblo
Platte R.
Omaha
NEBRASKA
Lincoln
Sioux Falls
SOUTH DAKOTA
Pierre
Minneapolis
St. Paul
WISCONSIN
Milwaukee
Madison
Sioux City
IOWA
Des Moines
Chicago
ILLINOIS
Springfield
Indianapolis
Cleveland
Pittsburg
PENNSYLVANIA
Harrisburg
Philadelphia
Trenton
Dover
OHIO
Columbus
Cincinnati
WASHINGTON
Baltimore
Annapolis
WEST VIRGINIA
Ohio R.
Missouri R.
Kansas City
Jefferson C.
KANSAS
Topeka
St. Louis
Louisville
KENTUCKY
Frankfort
Charleston
Richmond
Norfolk
Grand Canyon
Colorado R.
Arkansas R.
Canadian R.
OKLAHOMA
Ft. Smith
Santa Fe
NEW MEXICO
Albuquerque
ARIZONA
Phoenix
Gila R.
Tucson
Rio Grande
Pecos R.
Red R.
Little Rock
ARKANSAS
Memphis
Nashville
Chattanooga
TENNESSEE
Hatteras C.
Raleigh
NORTH CAROLINA
Wilmington
SOUTH CAROLINA
Columbia
Charleston
Savannah
Atlanta
GEORGIA
Jacksonville
Tennessee R.
Vicksburg
Jackson
Montgomery
ALABAMA
Mobile
Tombigbee R.
Mississippi R.
Baton Rouge
New Orleans
Dallas
Brazos R.
TEXAS
Austin
Houston
Galveston
San Antonio
Rio Grande
Gulf of California
Lower California
FLORIDA
Tampa
Key West
C. Sable
BAHAMA ISLANDS
HAVANA
CUBA
XIV
120
115
110
105
100
95
90
85
80
75
70
125
45
40
35
30
25

The United States

State	Area in Sq. Miles	Pop. 1920	Capital
Alabama	51,998	2,348,174	Montgomery
Arizona	113,956	334,162	Phoenix
Arkansas	53,335	1,752,204	Little Rock
California	158,297	3,426,861	Sacramento
Colorado	103,948	939,629	Denver
Connecticut	4,965	1,380,631	Hartford
Delaware	2,370	223,003	Dover
Dist. of Columbia	70	437,571	
Florida	58,666	968,470	Tallahassee
Georgia	59,265	2,895,832	Atlanta
Idaho	83,888	431,866	Boise
Illinois	56,665	6,485,280	Springfield
Indiana	36,354	2,930,390	Indianapolis
Iowa	56,147	2,404,021	Des Moines
Kansas	82,158	1,769,257	Topeka
Kentucky	40,598	2,416,630	Frankfort
Louisiana	48,506	1,798,509	Baton Rouge
Maine	33,040	768,014	Augusta
Maryland	12,327	1,449,661	Annapolis
Massachusetts	8,266	3,852,356	Boston
Michigan	57,980	3,668,412	Lansing
Minnesota	84,682	2,387,125	St. Paul
Mississippi	46,865	1,790,618	Jackson
Missouri	69,420	3,404,055	Jefferson City
Montana	146,997	548,889	Helena
Nebraska	77,520	1,296,372	Lincoln
Nevada	110,690	77,407	Carson City
New Hampshire	9,341	443,083	Concord
New Jersey	8,224	3,155,900	Trenton
New Mexico	122,634	360,350	Santa Fe
New York	49,204	10,385,227	Albany
North Carolina	52,426	2,559,123	Raleigh
North Dakota	70,837	646,872	Bismarck
Ohio	41,040	5,759,394	Columbus
Oklahoma	70,057	2,028,283	Oklahoma City
Oregon	96,699	783,389	Salem
Pennsylvania	45,126	8,720,017	Harrisburg
Rhode Island	1,248	604,397	Providence
South Carolina	30,989	1,683,724	Columbia
South Dakota	77,615	636,547	Pierre
Tennessee	42,022	2,337,885	Nashville
Texas	265,896	4,663,228	Austin
Utah	84,990	449,396	Salt Lake City
Vermont	9,564	352,428	Montpelier
Virginia	42,627	2,309,187	Richmond
Washington	69,127	1,356,621	Olympia
West Virginia	24,170	1,463,701	Charleston
Wisconsin	56,066	2,632,067	Madison
Wyoming	97,914	194,402	Cheyenne
Part of Gt. Lakes	61,730		
Main Body	**3,088,519**	**105,710,620**	

Outlying Territory, Etc.

Alaska ('10)	590,884	55,036	Juneau
Guam	210	13,275	Agaña
Hawaii	6,449	255,912	Honolulu
Philippines ('18)	115,026	10,350,640	Manila
Porto Rico	3,435	1,299,809	San Juan
Pan. Canal Zone	527	22,858	
Samoan Is., etc.	77	8,056	
Virgin Is., of the U. S. ('17)	132	26,051	
Soldiers and Sailors stationed abroad		117,238	
Total Outlying	**716,740**	**12,148,875**	
Grand Total	**3,805,259**	**117,859,495**	

Largest Cities of the United States

	Population, 1920
New York, N.Y.	5,620,048
Chicago, Ill.	2,701,705
Philadelphia, Pa.	1,823,779
Detroit, Mich.	993,678
Cleveland, Ohio	796,841
St. Louis, Mo.	772,897
Boston, Mass.	748,060
Baltimore, Md.	733,826
Pittsburgh, Pa.	588,343
Los Angeles, Cal.	576,673
Buffalo, N. Y.	506,775
San Francisco, Cal.	506,676
Milwaukee, Wis.	457,147
Washington, D.C.	437,571
Newark, N. J.	414,524
Cincinnati, Ohio.	401,247
New Orleans, La.	387,219
Minneapolis, Minn.	380,582
Kansas City, Mo.	324,410
Seattle, Wash.	315,312
Indianapolis, Ind.	314,194
Jersey City, N.J.	298,103
Rochester, N. Y.	295,750
Portland, Ore.	258,288
Denver, Colo.	256,491
Toledo, Ohio	243,164
Providence, R. I.	237,595
Columbus, Ohio.	237,031
Louisville, Ky.	234,891
St. Paul, Minn.	234,698
Oakland, Cal.	216,261
Akron, Ohio	208,435
Atlanta, Ga.	200,616
Omaha, Nebr.	191,601
Worcester, Mass.	179,754
Birmingham, Ala.	178,806
Syracuse, N.Y.	171,717
Richmond, Va.	171,667
New Haven, Conn.	162,537
Memphis, Tenn.	162,351
San Antonio, Tex.	161,379
Dallas, Tex.	158,976
Dayton, Ohio	152,559
Bridgeport, Conn.	143,555
Houston, Tex.	138,276
Hartford, Conn.	138,036
Scranton, Pa.	137,783
Grand Rapids, Mich.	137,634
Paterson, N. J.	135,875
Youngstown, Ohio	132,358
Springfield, Mass.	129,614
Des Moines, Iowa	126,468
New Bedford, Mass.	121,217
Fall River, Mass.	120,485
Trenton, N. J.	119,289
Nashville, Tenn.	118,342
Salt Lake City, Utah	118,110
Camden, N. J.	116,309
Norfolk, Va.	115,777
Albany, N. Y.	113,344
Lowell, Mass.	112,759
Wilmington, Del.	110,168
Cambridge, Mass.	109,694
Reading, Pa.	107,784
Fort Worth, Tex.	106,482
Spokane, Wash.	104,437
Kansas City, Kan.	101,177
Yonkers, N. Y.	100,176


SOUTH AMERICA
SCALE OF MILES
0 200 400 600 800 1000
Same scale as large map
NEW YORK
Area
49,204 sq. m.
Long. 70 West 60 from 50 Green. 40
80 70 60 50 40
100 90 80
30 20
WEST INDIES
CARIBBEAN SEA
PACIFIC OCEAN
ATLANTIC OCEAN
Pt. Gallinas
Barranquilla
Maracaibo
Curaçao
Valencia
La Guaira
Barcelona
TRINIDAD I. (Br.)
Panama
Gulf of Darien
Lake Maracaibo
CARACAS
Delta of the Orinoco R.
GEORGETOWN
PARAMARIBO
CAYENNE
Bay of Panama
Merida
Bolivar
VENEZUELA
Mt. Roraima
GUIANA
(Br.) (Dutch) (Fr.)
BOGOTA
Mt. Ioutu
COLOMBIA
Cassiquiare R.
Magdalena R.
Cauca R.
Orinoco R.
QUITO
Mt. Chimborazo
Guayaquil
ECUADOR
Gulf of Guayaquil
Pt. Parina
Napo R.
Tapajos R.
Rio Negro
Manaos
Amazon R.
Marajo I.
Para R.
EQUATOR
Para
Maranhao
C. St. Roque
Ceara
L. Pernambuco
Pasco
LIMA
Rimac R.
Callao
Cuzco
Mt. Misti
Arequipa
Mollendo
Mt. Sahama
La Paz
Sucre
Cochabamba
Iquique
Potosi
Guapore R.
Mt. Illimani
Cuyaba
MATTO GROSSO
PYRENOPOLIS
Goyaz
Bahia
Diamantina
Petropolis
Sao Paulo
C. Frio
Santos
RIO DE JANEIRO
TROPIC OF CAPRICORN
Antofagasta
EL GRAN CHACO
PARAGUAY
ASUNCION
Paraguay R.
Tucuman
Porto Alegre
Cordova
Parana
Rio Grande do Sul
Mt. Aconcagua
Mendoza
Rosario
URUGUAY
Valparaiso
SANTIAGO
JUAN FERNANDEZ IS. (Chile)
Talca
BUENOS AIRES
La Plata
MONTEVIDEO
Plata R.
C. Corrientes
Concepcion
Bahia Blanca
CHILOE I.
CHONOS ARCHIPELAGO
St. George Bay
WELLINGTON I.
Strait of Magellan
FALKLAND IS. Br.
Magallanes
TIERRA DEL FUEGO
Cape Horn
S. GEORGIA I. (Br.)

Population of Cities in North America and South America

NORTH AMERICA

Canada (1921)

Montreal (25)	908,000
Toronto (26)	557,000
Winnipeg (26)	191,000
Ottawa (26)	119,000
Vancouver	117,000
Hamilton	114,000
Quebec	95,000
Calgary (26)	65,000
Edmonton (26)	65,000
London	61,000
Halifax	58,000
St. John	47,000
Victoria	39,000
Regina (26)	37,000

Newfoundland (1926)

St. Johns	40,000

CENTRAL AMERICA

British Honduras (1921)

Belize	13,000

Costa Rica (1927)

San Jose	44,000

Guatemala (1921)

Guatemala	116,000
Quezaltenango	30,000
Coban	27,000

Honduras (1923)

Tegucigalpa	40,000

Nicaragua (1920)

Leon (26)	33,000
Managua	24,000
Granada	18,000

Panama (1920)

Panama	67,000
Colon	31,000

Salvador (1927)

San Salvador	87,000
Santa Ana	74,000

Mexico (1921)

Mexico	906,000
Guadalajara	143,000
Puebla	96,000
Monterey	88,000
Merida	79,000
San Luis Potosi	57,000
Vera Cruz	54,000
Leon	54,000
Aguas Calientes	48,000
Pachuca	41,000
Saltillo	40,000
Durango	39,000
Morelia	31,000

United States

(See Table, page xv.)

West Indies

Havana, Cuba	563,000
Santiago de Cuba, Cuba	141,000
Camaguey, Cuba	93,000
Cienfuegos, Cuba	73,000
Port au Prince, Haiti	125,000
Santo Domingo, Dom. Rep.	31,000
Kingston, Jamaica	63,000
San Juan, Porto Rico	71,000
Ponce, Porto Rico	42,000
Fort de France, Martinique	26,000
Bridgetown, Barbados	13,000
St. Thomas, Virgin Islands	8,000

SOUTH AMERICA

Argentina (1922)

Buenos Aires (27)	2,310,000
Rosario	265,000
Cordoba (18)	156,000
La Plata	151,000
Tucuman	91,000
Santa Fe	60,000
Mendoza	59,000
Bahia Blanca	44,000

Brazil (1920)

Rio de Janeiro	1,158,000
São Paulo	579,000
Bahia	283,000
Pernambuco (Recife)	239,000
Para (Belem)	236,000
Porto Alegre	179,000
Nictheroy	86,000
Manaos	76,000

Bolivia (1924)

La Paz	118,000
Cochabamba	34,000
Oruro	33,000
Potosi	30,000
Santa Cruz	18,000
Sucre	16,000

Chile (1920)

Santiago	507,000
Valparaiso	182,000
Concepcion	64,000
Antofagasta	51,000
Iquique	37,000
Talca	36,000
Chillan	31,000

Colombia (1923)

Bogota	166,000
Medellin	86,000
Barranquilla	81,000
Cali	69,000
Cartagena	68,000
Manizales	52,000
Cucuta	40,000
Bucaramanga	30,000

Ecuador (1926)

Guayaquil	100,000
Quito	81,000

Guiana

Georgetown, British Guiana (1926)	57,000
Paramaribo, Dutch Guiana (1926)	46,000
Cayenne, French Guiana (1926)	14,000

Paraguay (1926)

Asuncion	114,000

Peru (1925)

Lima	220,000
Callao	66,000
Arequipa	58,000
Cuzco	37,000
Chiclayo	30,000

Uruguay (1926)

Montevideo	439,000

Venezuela (1926)

Caracas	135,000
Maracaibo	75,000
Valencia	37,000


EUROPE
SCALE OF MILES
0 100 200 400 600
ATLANTIC OCEAN
ARCTIC OCEAN
NORTH SEA
BALTIC SEA
MEDITERRANEAN SEA
BLACK SEA
CASPIAN SEA
AZOV SEA
ARAL SEA
UNION OF SOCIALIST SOVIET REPUBLICS
RUSSIA
KAZAKSTAN
ASIA MINOR
AFRICA
ICELAND
Mt. Hekla (Vol.)
REIKJAVIK
JAN MAYEN I.
FAROE IS.
SHETLAND IS.
ORKNEY IS.
HEBRIDES
NORTH CAPE
Hammerfest
LOFODEN IS.
ARCTIC CIRCLE
NOVAYA ZEMLYA
Kara Sea
White Sea
Archangel
Dvina R.
LAPLAND
SWEDEN
NORWAY
OSLO
STOCKHOLM
HELSINGFORS
Gulf of Bothnia
Gulf of Finland
L. Ladoga
Leningrad
REVAL
ESTONIA
Valdai Hills
MOSCOW
LITHUANIA
KOVNO
Vilna
WHITE RUSSIA
Pripet R.
Dvina R.
Volga R.
Ural Mts.
Ural R.
Caspian Depression
Lake Aral
TURKOMAN REP.
BRITISH ISLES
Glasgow
EDINBURGH
NORTHERN IRELAND
IRISH FREE STATE
DUBLIN
Liverpool
LONDON
St. George Ch.
English Channel
DENMARK
COPENHAGEN
NETHERLANDS
The Hague
Amsterdam
BRUSSELS
Antwerp
Rotterdam
Meuse R.
Rhine R.
Elbe R.
Hamburg
BERLIN
Danzig
WARSAW
POLAND
Oder R.
Vistula R.
Kiev
UKRAINE
Dniepr R.
Dniester R.
Odessa
Astrakhan
Volga R.
Ural R.
Havre
PARIS
Seine R.
Loire R.
PRAGUE
CZECHOSLOVAKIA
Munich
VIENNA
AUSTRIA
BUDAPEST
Danube R.
BERN
SWITZ.
HUNGARY
RUMANIA
BUCHAREST
Sea of Azov
Crimea
Sebastopol
Mt. Elburz
Caucasus Mts.
GEORGIA
CAUCASIA
ARMENIA
Baku
Batum
TURKOMAN
C. Finisterre
BAY OF BISCAY
FRANCE
Lyons
St. Etienne
Bordeaux
Pyrenees
Mt. Blanc
Geneva
Venice
Trieste
Fiume
BELGRADE
JUGOSLAVIA
Drave R.
Danube R.
Sava R.
BULGARIA
SOFIA
Constantinople
Bosporus
Sea of Marmora
Dardanelles
Smyrna
ADRIATIC SEA
Timavo R.
Marseille
CORSICA
ROME
Napier
Mt. Vesuvius
SARDINIA
Tiber R.
Arno R.
Po R.
Rhone R.
SPAIN
LISBON
PORTUGAL
Tagus R.
MADRID
Barcelona
BALEARIC IS.
C. St. Vincent
Str. of Gibraltar
Malaga
Gibraltar
Palermo
SICILY
Mt. Etna
Messina
Str. of
IONIAN SEA
Salonica
ATHENS
Aegean Sea
CRETE
CYPRUS
On the same scale
NEW YORK
Area
49,204 sq. m.
10 Longitude West 0 Longitude East 10 from Greenwich 20 30 40 50
L.L. POATES CO., N.Y.

Population of Cities in Europe

Albania (1928)	
Durazzo	5,000
Austria (1923)	
Vienna	1,866,000
Gratz	153,000
Linz	102,000
Innsbruck	56,000
Belgium (1926)	
Brussels	809,000
Antwerp	300,000
Liege	168,000
Ghent	163,000
Bulgaria (1926)	
Sofia	213,000
Philippopolis	85,000
Czechoslovakia (1921)	
Prague	676,000
Brun	222,000
Pressburg	93,000
Danzig (1924)	
Danzig	384,000
Denmark (1921)	
Copenhagen	587,000
Estonia (1926)	
Reval	127,000
Finland (1926)	
Helsingfors	216,000
France (1926)	
Paris	2,871,000
Marseille	652,000
Lyon	571,000
Bordeaux	256,000
Lille	202,000
St. Etienne	194,000
Nantes	185,000
Nice	184,000
Toulouse	181,000
Strasbourg	174,000
Havre	158,000
Rouen	123,000
Roubaix	117,000
Toulon	115,000
Nancy	114,000
Clermont-Ferrand	112,000
Reims	101,000
Germany (1925)	
Berlin	4,024,000
Hamburg	1,079,000
Cologne	700,000
Munich	681,000
Leipzig	679,000
Dresden	619,000
Breslau	557,000
Essen	471,000
Frankfurt-am-Main	468,000
Germany (*continued*)	
Dusseldorf	433,000
Hanover	423,000
Nuremberg	392,000
Stuttgart	342,000
Chemnitz	332,000
Dortmund	322,000
Bremen	295,000
Magdeburg	293,000
Konigsberg	280,000
Duisburg	273,000
Stettin	254,000
Mannheim	247,000
Kiel	214,000
Greece (1928)	
Athens	451,000
Salonica	221,000
Piraeus	251,000
Hungary (1920)	
Budapest	1,217,000
Szeged	119,000
Italy (1926)	
Milan	877,000
Rome	875,000
Naples	852,000
Turin	520,000
Palermo	419,000
Genoa	333,000
Florence	266,000
Catania	263,000
Yugoslavia (1927)	
Belgrade	250,000
Latvia (1925)	
Riga	338,000
Lithuania (1914)	
Kovno	95,000
Luxemburg (1922)	
Luxemburg	48,000
Netherlands (1926)	
Amsterdam	727,000
Rotterdam	563,000
Hague	409,000
Norway (1920)	
Oslo	258,000
Poland (1921)	
Warsaw	937,000
Lodz	452,000
Lemberg	219,000
Krakow	184,000
Portugal (1925)	
Lisbon	530,000
Oporto	216,000
Rumania (1917)	
Bucharest	309,000
Russia (1926)	
Moscow	2,019,000
Leningrad	1,616,000
Kief	494,000
Odessa	411,000
Kharkof	410,000
Saratof	212,000
Nizhni Novgorod	181,000
Spain (1926)	
Madrid	800,000
Barcelona	752,000
Valencia	265,000
Seville	214,000
Sweden (1927)	
Stockholm	453,000
Goteborg	231,000
Switzerland (1925)	
Zurich	211,000
Basel	140,000
Geneva	126,000
Bern	108,000
Lausanne	74,000
Turkey (1927)	
Constantinople	564,000
United Kingdom (1921)	
England	
London	7,480,000
Birmingham	919,000
Liverpool	803,000
Manchester	730,000
Sheffield	491,000
Leeds	458,000
Bristol	377,000
West Ham	301,000
Hull	287,000
Bradford	286,000
Newcastle	275,000
Nottingham	263,000
Portsmouth	247,000
Stoke-on-Trent	240,000
Leicester	234,000
Salford	234,000
Scotland (1921)	
Glasgow	1,034,000
Edinburgh	420,000
Dundee	168,000
Aberdeen	159,000
Northern Ireland	
Belfast ('26)	415,000
Wales	
Cardiff	200,000
Irish Free State	
Dublin ('26)	419,000


ASIA
SCALE OF MILES
0 200 400 600 800 1000
Same scale as large map
NEW YORK
Area 49,204 sq. m.
L.L.POATES CO., N.Y.
ARCTIC OCEAN
ATLANTIC OCEAN
PACIFIC OCEAN
INDIAN OCEAN
UNION OF SOCIALIST SOVIET REPUBLICS
RUSSIA
SIBERIA
CHINA
REPUBLIC OF CHINA
MONGOLIA
SINKIANG
TIBET
JAPAN
EMPIRE OF JAPAN
TURKEY
PERSIA
ARABIA
INDIA
AFGHANISTAN
SOUTH CHINA SEA
PHILIPPINE ISLANDS
BORNEO
SUMATRA
CEYLON
Longitude 60 East from 80 Greenwich
EQUATOR
TROPIC OF CANCER

Population of Cities in Asia, Africa, and Australia

ASIA

Afghanistan

Kabul	100,000
Kandahar	60,000
Herat	21,000

Arabia

Mecca, Hejaz	70,000
Aden, Aden	55,000
Jidda, Hejaz	25,000
Maskat, Oman	20,000

China (proper) (1926)

Shanghai	1,500,000
Hankow	1,468,000
Peking(Peiping)	1,300,000
Singan	1,000,000
Hangchow	1,000,000
Canton	900,000
Tientsin	800,000
Chungkung	622,000
Changsha	536,000
Soochow	500,000
Nanking	396,000

Manchuria

Mukden	250,000

Mongolia

Urga	38,000

Tibet

Lassa	20,000

Chinese Turkestan (Sinkiang)

Kashgar	60,000
Yarkand	60,000

French Indo-China ('26)

Cholon, Cochin-China	199,000
Saigon, Cochin-China	143,000
Hanoi, Tonkin	103,000
Pnum-Penh, Cambodia	82,000
Binh-Dinh, Anam	74,000
Hue, Anam	61,000

Hong Kong

Victoria ('21)	465,000

India (1921)

Calcutta	1,327,000
Bombay	1,176,000
Madras	527,000
Haidarabad	404,000
Rangoon	342,000
Delhi	304,000
Lahore	282,000
Ahmedabad	274,000
Lucknow	240,000
Bangalore	237,000

India (*continued*)

Karachi	217,000
Cawnpur	216,000
Poona	215,000
Benares	198,000
Mandalay	149,000

Japan (1925)

Osaka	2,115,000
Tokyo	1,996,000
Nagoya	769,000
Kobe	644,000
Kyoto	680,000
Yokohama	519,000
Seoul	303,000
Hiroshima	196,000
Nagasaki	189,000

Iraq (1920)

Mosul	350,000
Bagdad	250,000

Palestine (1922)

Jerusalem	63,000
Jaffa	48,000

Persia

Teheran	350,000
Tabriz	180,000
Ispahan	100,000
Resht	80,000

Philippines (1918)

Manila	284,000
Iloilo	48,000
Cebu	46,000

Russia in Asia (1926)

Baku	447,000
Tashkent	321,000
Tiflis	283,000
Omsk	161,000
Vladivostok	102,000
Samarkand	101,000
Irkutsk	98,000
Tomsk	92,000
Kokand	69,000

Siam (1920)

Bangkok	630,000

Straits Settlements

Singapore ('21)	350,000

Syria

Damascus	170,000
Aleppo	140,000
Beirut	80,000

Turkey (1927)

Smyrna	154,000
Angora	75,000
Adana	72,000
Brusa	61,000
Konia	47,000
Kaisariye	40,000

AFRICA

Abyssinia

Adis Abeda	60,000

Algeria (1926)

Algiers	226,000
Oran	150,000

Anglo-Egyptian Sudan

Khartum	31,000

Egypt (1927)

Cairo	1,060,000
Alexandria	570,000
Port Said	103,000

Kenya (1921)

Mombasa	40,000

Liberia

Monrovia	10,000

Libia (1926)

Tripoli	60,000
Bengazi	30,000

Madagascar (1926)

Tananarivo	71,000

Morocco (1926)

Morocco	149,000
Casablanca	107,000
Fez	81,000
Rabat	38,000
Tangier	16,000

Sierra Leone (1921)

Freetown	44,000

Tunis (1926)

Tunis	186,000

Union of So. Africa ('21)

Johannesburg	288,000
Cape Town	207,000
Durban	146,000
Pretoria	94,000
Kimberley	40,000
Bloenfontein	39,000

Zanzibar

Zanzibar	39,000

AUSTRALIA AND EAST INDIES

Australia (1926)

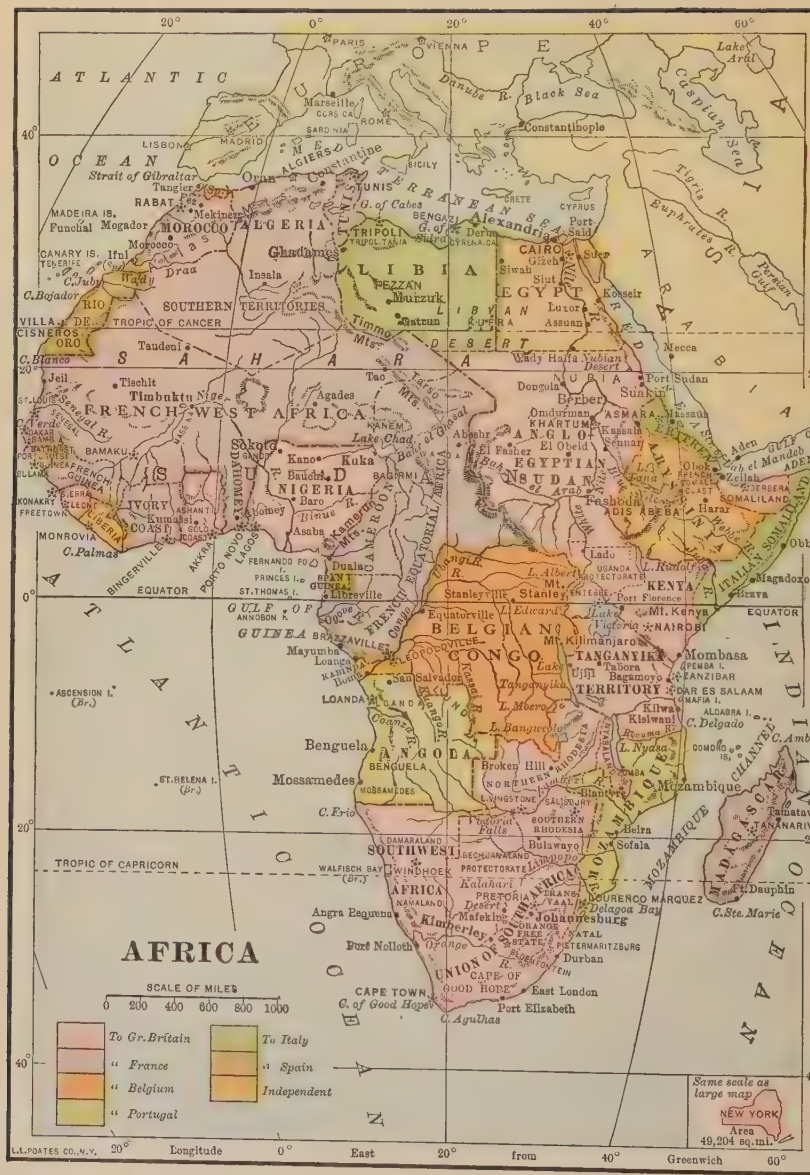
Sydney	1,071,000
Melbourne	944,000
Adelaide	317,000
Brisbane	274,000
Perth	153,000
Ballarat	42,000

New Zealand (1927)

Auckland	202,000
Wellington	127,000
Christchurch	122,000
Dunedin	83,000

Dutch East Indies

Batavia, Java	254,000


AFRICA
ATLANTIC OCEAN
INDIAN OCEAN
MEDITERRANEAN SEA
ARABIA
EUROPE
MOROCCO
ALGERIA
TUNIS
LIBIA
EGYPT
SAHARA DESERT
FRENCH WEST AFRICA
NIGERIA
ANGLO EGYPTIAN SUDAN
ABYSSINIA
ITALIAN SOMALILAND
BRITISH EAST AFRICA
KENYA
BELGIAN CONGO
FRENCH EQUATORIAL AFRICA
ANGOLA
SOUTHWEST AFRICA
UNION OF SOUTH AFRICA
MOZAMBIQUE
MADAGASCAR
TROPIC OF CANCER
TROPIC OF CAPRICORN
EQUATOR
SCALE OF MILES
0 200 400 600 800 1000
To Gr. Britain
" France
" Belgium
" Portugal
To Italy
" Spain
Independent
Same scale as large map
NEW YORK
Area 49,204 SQ. MI.
L.L. POATES CO., N.Y.
Longitude 0° East 20° from 40° Greenwich 60°

General Tables

Distances, etc.

	Miles
Distance, Earth to Sun	93,000,000
Distance, Earth to Moon	240,000
Diameter of Earth, Polar	7,900
Diameter of Earth, Equatorial	7,926
Degree of Latitude, about	69
Circumference at the Equator	24,900

Heights of Mountains, Plateaus and Peaks

North America

	Feet
Rocky Mts.	10,000
Sierra Nevada	9,000
Cascade Mts.	9,000
Sierra Madre	8,500
Coast Ranges	3,000
Appalachian Mts.	2,500
Mexican Plateau	7,500
Mt. McKinley, Alaska	20,464
Mt. Logan, Canada	19,539
Mt. Orizaba, Mexico	18,314
Mt. St. Elias, Alaska	18,010
Mt. Popocatepetl, Mexico	17,784
Mt. Whitney, Cal., Sierra Nevada	14,502
Mt. Shasta, Cal., Cascade Mts.	14,380
Pikes Peak, Col., Rocky Mts.	14,111
Mt. Mitchell, N. C., Appalachians.	6,711

South America

	Feet
Andes Mts.	13,000
Bolivian Plateau	12,500
Mt. Aconcagua, Argentina	23,860
Mt. Sahama. Bolivia	22,350
Mt. Sorata, Bolivia	21,286

South America (*continued*)

	Feet
Mt. Illimani, Bolivia	21,030
Mt. Chimborazo, Ecuador	20,517
Mt. Misti, Peru	20,320
Mt. Cotopaxi, Ecuador	19,613
Mt. Tolima, Colombia	18,300
Mt. Icutu, Venezuela.	11,000
Mt. Itatiaia, Brazil	9,840

Europe

	Feet
Alps Mts., Switzerland	8,500
Pyrenees Mts., Spain	8,000
Ural Mts., Russia	3,500
Kiolen, Norway	3,000
Mt. Blanc, France.	15,780
Mt. Etna, Sicily	10,865
Mt. Hekla, Iceland	5,110
Mt. Vesuvius, Italy	4,260

Asia

	Feet
Himalaya Mts.	19,000
Karakoram Mts., Tibet	18,500
Tien Shan, Turkestan	18,000
Kuenlun, Tibet	18,000
Caucasus Mts.	10,000
Pamir Plateau	16,000
Tibet Plateau	15,000
Mt. Everest, Nepal	29,002
Mt. Elburz, Caucasus	18,493
Mt. Ararat, Armenia	17,325
Mt. Fujiyama, Japan	12,395

Africa

	Feet
Atlas Mts., Morocco	9,000
Abyssinian Plateau	6,500
Mt. Kilimanjaro, East Africa	19,780
Mt. Kenya, East Africa	19,000
Mt. Stanley	16,800

Lengths of Great Rivers

North America

	Miles
Missouri-Mississippi,	4,200
Missouri	2,900
Mississippi	2,600
St. Lawrence	2,100
Mackenzie.	2,100
Arkansas	2,000
Yukon	2,000
Colorado	2,000
Nelson-Saskatchewan	1,900
Rio Grande	1,800
Columbia	1,300
Ohio	1,000
Fraser	750

South America

	Miles
Amazon	3,500
Parana-Plata	2,600
São Francisco	1,800
Orinoco.	1,500
Magdalena	1,100

Australia

	Miles
Darling	1,100
Murray	1,100

Europe

	Miles
Volga	2,300
Danube	1,800
Dnieper	1,300
Dwina	1,000
Don	1,000
Rhine	800

Asia

	Miles
Yangtze	3,100
Ob	3,000
Yenisei	3,000
Hwang	2,800
Lena	2,800
Amur	2,800
Mekong	2,600
Indus	2,000
Euphrates	2,000
Brahmaputra	1,800
Ganges	1,500
Irrawaddy	1,500

Africa

	Miles
Nile	3,900
Niger	2,900
Congo	2,800
Zambezi	1,600
Orange	1,200

Areas of Great Lakes

North America

	Sq. Miles
Superior	31,000
Huron	24,000
Michigan	22,500
Great Bear	14,000
Erie	10,000
Winnipeg	9,000
Ontario	7,250
Nicaragua	3,000
Great Salt	2,300

South America

	Sq. Miles
Titicaca	3,250

Europe

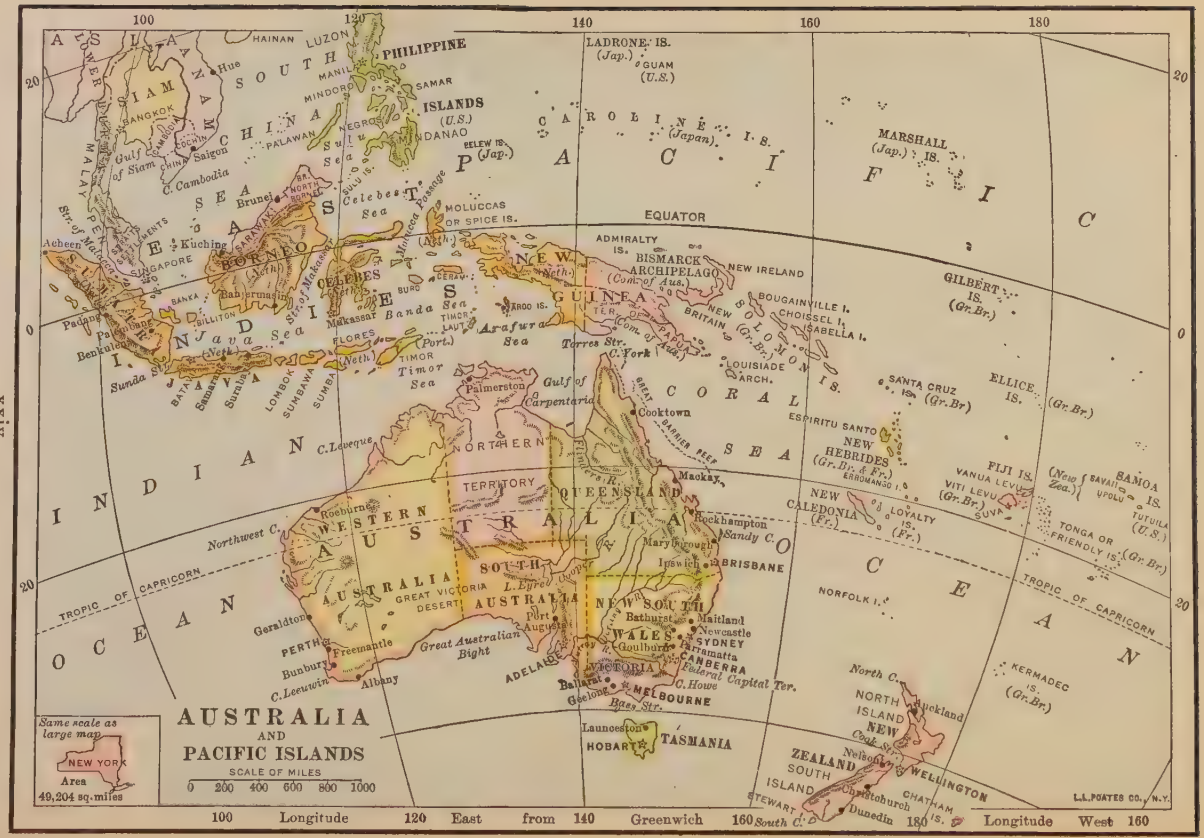
	Sq. Miles
Ladoga	7,000

Asia

	Sq. Miles
Caspian	169,000
Aral	26,000
Baikal	13,000
Balkash	8,500
Dead Sea	350

Africa

	Sq. Miles
Victoria	32,000
Nyasa	14,000
Tanganyika	14,000
Chad	10,000


AUSTRALIA AND PACIFIC ISLANDS
SCALE OF MILES
0 200 400 600 800 1000
Same scale as large map
NEW YORK
Area 49,204 sq. miles
100 Longitude 120 East from 140 Greenwich 160 South C. 180 Longitude West 160
AXLY
INDIAN OCEAN
PACIFIC OCEAN
AUSTRALIA
NEW ZEALAND
NEW GUINEA
CORAL SEA
TASMAN SEA
EQUATOR
TROPIC OF CAPRICORN
PHILIPPINE ISLANDS (U.S.)
CAROLINE I.S. (Japan)
MARSHALL IS. (Jap.)
LADRONE IS. (Jap.)
GUAM (U.S.)
BISMARCK ARCHIPELAGO (Com. of Aus.)
NEW IRELAND
NEW BRITAIN (Gr. Br.)
BOUGAINVILLE I.
CHOISSEL I.
ISABELLA I.
SOLOMON IS.
GILBERT IS. (Gr. Br.)
ELLICE IS. (Gr. Br.)
SANTA CRUZ IS. (Gr. Br.)
NEW HEBRIDES (Gr. Br. & Fr.)
ESPIRITU SANTO
VANUA LEVU
VITI LEVU (Gr. Br.)
FIJI IS.
SAMOA IS.
TONGA OR FRIENDLY IS. (Gr. Br.)
NEW CALEDONIA (Fr.)
LOYALTY IS. (Fr.)
NORFOLK I.
KERMADEC IS. (Gr. Br.)
CHATHAM IS.
NORTH ISLAND
SOUTH ISLAND
STEWART I.
TASMANIA
HOBART
Launceston
MELBOURNE
Geelong
Ballarat
Bay Str.
C. Howe
ADELAIDE
Great Australian Bight
Port Augusta
L. Eyre
GREAT VICTORIA DESERT
SOUTH AUSTRALIA
NORTHERN TERRITORY
WESTERN AUSTRALIA
QUEENSLAND
NEW SOUTH WALES
VICTORIA
Federal Capital Ter.
CANBERRA
SYDNEY
Newcastle
Maitland
Batburst
Goulburn
Parramatta
Wollongong
BRISBANE
Rockhampton
Mackay
Cooktown
Townsville
Palmerston
Gulf of Carpentaria
Torres Str.
C. York
Arafura Sea
Timor Sea
Banda Sea
Celebes Sea
Molucca Passage
MOLUCCAS OR SPICE IS.
CELEBES
BORNEO
Kuching
Brunei
SINGAPORE
Gulf of Siam
C. Cambodia
Saigon
Hue
BANGKOK
HAINAN
LUZON
MANILA
MINDORO
SAMAR
NEGROS
PALAWAN
MINDANAO
CELEW IS. (Jap.)
Sulu Sea
Sulu S.
Str. of Malacca
Acheen
Padang
Benkulen
Java Sea
Sunda Str.
BANKA
BILLITON
FLORES
TIMOR (Port.)
TIMOR (Neth.)
ARROO IS.
TERR. OF PAPUA (Aus.)
Gulf of Papua
Coral Sea
Great Barrier Reef
Flinders R.
Roebourne
Northwest C.
Geraldton
PERTH
Fremantle
Bunbury
Albany
C. Leeuwin
C. Leveque
Derby
Broome
Darwin
Port Darwin
Roebuck B.
Timor Sea
Arafura Sea
Gulf of Carpentaria
Mary River
Irwell
Sandy C.
Hervey B.
Maryborough
Brisbane
Rockhampton
Mackay
Townsville
Cooktown
Torres Str.
C. York
Louisiade Arch.
Ermonango I.
Loyalty Is. (Fr.)
Suva
Vanua Levu
Viti Levu (Gr. Br.)
Fiji Is.
Savaii (New Zea.)
Upolu
Samoa Is.
Tutuila (U.S.)
Tonga or Friendly Is. (Gr. Br.)
Norfolk I.
Kermadec Is. (Gr. Br.)
North C.
Auckland
North Island
New Zealand
Cook Str.
Wellington
Nelson
Christchurch
Chatham Is.
South Island
Stewart I.
Dunedin
South C.
L.L. POATES CO., N.Y.

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